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November 24, 2014



VIA OVERNIGHT DELIVERY

237126

Ms. Cynthia T. Brown
Chief, Section of Administration
Office of Proceedings
Surface Transportation Board
395 E. Street, S.W.
Washington, D.C. 20024

ENTERED
Office of Proceedings
November 28, 2014
Part of
Public Record

RE: Docket No. AB 33 (Sub No. 164 X)
Union Pacific Railroad Company –Abandonment Exemption—
In Bonne Terre, Missouri

Dear Ms. Brown:

Enclosed for filing with the Board please find the original and ten copies of the Petition to Reopen by Asarco LLC, in the above listed docket. The Declaration of Gregory Evans in Support of Petition to Reopen contains color images. Enclosed is a check in the amount of \$300.00 to cover the filing fee.

If you have any questions, please contact me.

Very truly yours,

A handwritten signature in black ink, appearing to read "Gregory Evans".

Gregory Evans

Enclosures

FILED
November 28, 2014
Surface Transportation Board

FEE RECEIVED
November 28, 2014
Surface Transportation Board

**BEFORE THE
SURFACE TRANSPORTATION BOARD**

AB-33 (SUB-NO. 164X)

**UNION PACIFIC RAILROAD COMPANY
-ABANDONMENT EXEMPTION-
IN BONNE TERRE, MISSOURI**

PETITION TO REOPEN



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Attorneys for ASARCO LLC

Dated: November 24, 2014

**BEFORE THE
SURFACE TRANSPORTATION BOARD**

AB-33 (SUB-NO. 164X)

**UNION PACIFIC RAILROAD COMPANY
-ABANDONMENT EXEMPTION-
IN BONNE TERRE, MISSOURI**

PETITION TO REOPEN

I. INTRODUCTION

In this Petition, Asarco LLC (“Asarco” or “Petitioner”) seeks to Reopen the Abandonment Exemption proceeding in Docket No. AB-33 (Sub-No. 164X) filed by Union Pacific Railroad Company in Bonne Terre, Missouri. In that proceeding, Union Pacific Railroad Company (“Union Pacific” or “UP”) sought and received authority to abandon 1.1 miles of rail line near Bonne Terre, Missouri, after representing to the Surface Transportation Board (“STB” or “Board”) that there would be no detrimental effects on public health and safety.

New evidence shows a changed circumstance in that this statement by Union Pacific was false when it was made, that this Board should address by granting this Petition to Reopen. Given the materiality of this misrepresentation, the Board should investigate when Union Pacific knew, or should have known, of the detrimental effects on public health and safety and issue the appropriate remedies to help protect the public and the environment, while concurrently

preserving the integrity of the Board's regulatory processes and the nation's transportation policies.

This new evidence surfaced after Asarco commenced a civil action pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601-9675, ("CERCLA") for contribution and cost recovery against Union Pacific for costs and damages incurred at the Superfund site located in Southeast Missouri ("Site" or "SEMO"). Asarco paid approximately \$80 million in the bankruptcy to settle all of its CERCLA-related liability at the Site, including response costs and natural resource damages. Bonne Terre, Missouri is the SEMO sub-site where new evidence surfaced, showing that the Union Pacific line at issue in the above-captioned proceeding was constructed with mining waste, or chat, and was releasing harmful metals into the environment before and after the abandonment proceeding at issue had commenced. Indeed, contrary to UP's representation to the STB – that there are no detrimental effects on the public health and safety – the releases of hazardous substances continue to this day.

As such, Asarco presents this new evidence and requests that the STB reopen the abandonment proceeding to rectify UP's misleading representations in its notice. Based upon the new evidence, Asarco further requests that any abandonment of the Line should only be allowed subject to proper sampling and other environmental monitoring conditions that the STB deems appropriate, in addition to provision of a report by UP regarding the environmental condition of all other abandoned lines in SEMO acquired by UP in the Missouri Pacific acquisition. Reopening the proceeding will maintain the integrity of the STB's regulatory processes and obligations, and its authority to advance national policy for a safe national transportation system, while protecting public health and safety.

II. BACKGROUND

A. The STB Proceeding

On November 30, 2000, Union Pacific filed a Notice of Abandonment Exemption with the STB in Docket No. AB-33 (Sub-No. 164X) (“Notice”) for 1.1 miles of the Bonne Terre Industrial Lead in Bonne Terre, St. Francois County, Missouri (“Line”). (*See* Declaration of Gregory Evans (“Evans Decl.”), Ex. A.)

Union Pacific also filed its Combined Environmental and Historical Report (“Combined Report”) with the Notice. (*Id.* at ASARCOSEMO00028397-28403.) Importantly, the Combined Report states there are no “known hazardous material waste sites or sites where known hazardous material spills have occurred at or along the subject right-of-way.” (*Id.* at ASARCOSEMO00028402.) The Combined Report further states “[t]here are no anticipated adverse effects on water quality” and “...no known adverse environmental impacts.” (*Id.* at ASARCOSEMO00028403.) The Notice was verified by Raymond E. Allamong, Jr., Manager-Rail Line Planning for Union Pacific. (*Id.* at ASARCOSEMO00028402.)

On December 8, 2000, the STB entered an Order, stating that “[p]ursuant to the provisions of 49 CFR 1152.29(e)(2), UP shall file a notice of consummation with the Board to signify that it has exercised the authority granted and fully abandoned the line.” (*See* Evans Decl., Ex. B at ASARCOSEMO00028446.)

On January 21, 2001, Union Pacific exercised the abandonment exemption and served its Notice of Consummation on January 23, 2001. (Evans Decl., Ex. C.)

On February 12, 2001, the STB entered a decision, finding:

...no environmental or historic preservation issues have been raised by any party or identified by the Section of Environmental Analysis. Accordingly, a Finding of No Significant Impact under 49 CFR 1105.10(g) will be made pursuant to 49 CFR 1011.8(c)(10).

It is entered:

1. Abandonment of the involved rail line will have no significant effect on the quality of the human environment and conservation of energy resources or on historic resources.

(Evans Decl., Ex. D at ASARCOSEMO28448.)

As explained in STB's Memorandum dated December 21, 2000, the finding of "no significant effect" was based upon the STB's conclusion in its Environmental Assessment that the "proposed abandonment will not significantly affect the quality of the human environment."

(Evans Decl., Ex. E at ASARCOSEMO00028475.)

B. The New Evidence

The basis of the petition to reopen is that in the original proceeding and related decisions, the STB did not consider evidence from Union Pacific or anyone that showed the mining waste used to construct the Line was leaching hazardous materials into the environment. New evidence from Asarco's sampling completed last year shows just such a threat to human health and safety, and the environment generally.

Specifically, in November 2013, Asarco's consultants collected three samples along the abandoned line showing ongoing threats to human health and safety from the on-going leaching of metals from the Line (SB-2, SB-3 and SB-4). (Evans Decl., Ex. F.) Asarco's expert, Paul V. Rosasco, P.E., explained the meaning of these results in his expert report of January 27, 2014, stating:

nearly all of the railroad ballast chat samples obtained by Asarco from the Bonne Terre and Fredericktown sampling locations (Figures 2 and 4) contained lead and zinc at concentrations above their respective PECs¹ and all of the samples obtained from rail line ballast in the Bonne Terre area (Figure 2) contained cadmium at concentrations above its PEC....Therefore, chat in railroad ballast beneath active or abandoned rail lines presents a threat of release to the environment that has already impacted human health and safety. (Evans Decl., Ex. G at 16-17.)

¹ Consensus-Based Probable Effects Concentrations.

Mr. Rosasco also prepared a table summarizing these results, which illustrates that the lead, cadmium and zinc levels at the abandoned line in Bonne Terre well exceed recommended levels. (Evans Decl., Ex. G at Table 2.) Asarco has prepared a version of the map included by Union Pacific in its original Notice, depicting Asarco's sampling locations on the Line for the Board's consideration. (Evans Decl., Ex. H.) Asarco's sampling illustrates that the Line that Union Pacific abandoned in 2001 in Bonne Terre is adversely affecting the environment and threatens human health and safety. Thus, the STB's decision that the "[a]bandonment of the involved rail line will have no significant effect on the quality of the human environment" was made without the benefit of the "new evidence" – which was not reasonably available to anyone other than UP as the proper owner of the Line at the time of its abandonment. Instead, UP denied the existence of such adverse impacts to human health and safety and the environment in general to the Board, and the Board based their abandonment decision on that representation. This new evidence alone constitutes grounds for the STB to reopen its proceeding and select an appropriate remedy and conditions for abandonment of the Line that would protect human health and safety as well as the Board's integrity. Also, given UP's acquisition of Missouri Pacific and its lines throughout Southeast Missouri, it is appropriate given the egregiousness of this new evidence that UP provide a report regarding the environmental condition of all other abandoned lines in SEMO acquired by UP in its acquisition of Missouri Pacific.

III. THE BOARD MAY REOPEN PROCEEDINGS AT ANY TIME BASED UPON NEW EVIDENCE OR SUBSTANTIALLY CHANGED CIRCUMSTANCES

The Board may, at any time and on its own initiative, because of material error, new evidence, or substantially changed circumstances, reopen a proceeding under 49 U.S.C. § 722(c). Any interested party may petition to reopen and reconsider an action of the Board under regulations promulgated by the Board.

In abandonment cases, a petition to reopen an administratively final action must state in detail the respects in which the challenged decision involves material error, or is affected by new evidence or substantially changed circumstances. 49 C.F.R. § 1152.25(e)(4). Such a petition should be granted upon a showing that the challenged action would be materially affected by one or more of these criteria. 49 C.F.R. § 1152.25(e)(2)(ii). Here, Petitioner has met its burden and the petition to reopen and for other relief should be granted.

A petition to reopen may be filed at any time. *See Burlington Northern and Santa Fe Railway Company – Abandonment Exemption – In Washington, County, OR, AB-6 (Sub. No. 383X), 2001 WL 1659570 (Dec. 21, 2001 STB)*. Indeed, there is no time limit on a petition to reopen an abandonment proceeding on the basis of newly discovered evidence. *Cf., Simmons v. ICC*, 784 F.2d 242, 245-46 (7th Cir. 1985).

Under these standards, new evidence showing that the railroad company had and still has leaching contaminants that threaten human health and safety satisfies the requirements under § 722. The materiality of the new evidence depends on a fact-specific inquiry as to the basis of each petition. *See Jost v. STB*, 194 F.3d 79 (1999) (reversing the STB decision denying landowners' petition to reopen a matter when petition stated that full-width sales had occurred to render right-of-way abandoned under federal law). As noted by the United States Court of Appeals for the District of Columbia, "the sale of full-width right-of-way would be material to

the Board's decision," concerning whether there was federal jurisdiction to maintain a trail on right-of-way no longer connected to the interstate railway system. Similarly, here, the leaching of contaminants from or along an abandoned line would be material to the Board's decision that abandonment would not adversely affect human health and safety, and well within the Board's jurisdiction to impose appropriate environmental conditions to protect the public and the environment.

As noted below, Petitioner provides reliable new evidence, which was not reasonably or readily attainable by the public, nor cumulative, to support its claims. Indeed, the new evidence related to this abandonment proceeding was not reasonably available to anyone, other than UP, at the time of the STB's actions in this proceeding, given at the time of the abandonment no one else had access to the property, which was then owned by Union Pacific. Importantly, not until long after the proceedings were final in this matter did this new evidence manifest itself – through expensive litigation, sampling of the property, and a detailed expert report. The STB's original decision in this proceeding lacked the new evidence that Union Pacific knew, or should have known, of the harm to public health and safety. Union Pacific's failure to disclose that the Line was constructed by mining waste, which was leaching hazardous materials into the environment, provided the very basis of the Board's decision to allow abandonment of the Line. This critical UP omission is exposed by the "new evidence" from Asarco's sampling in November 2013.

Accordingly, pursuant to the new evidence presented below, Petitioner requests that the Board reopen the proceeding, find that it does adversely impact human health and safety and issue appropriate remedies.

IV. THE STB SHOULD REOPEN THIS PROCEEDING BECAUSE PETITIONER'S NEW EVIDENCE SHOWS RELEASES OF HAZARDOUS MATERIALS ALONG THE SUBJECT RIGHT-OF-WAY

A. The New Samplings Relied Upon by Petitioner Establish the Release of Metals into the Environment

In November 2013, Asarco's consultants collected three samples along the abandoned line, SB-2, SB-3 and SB-4. (*See* Evans Decl., Ex. F.) Asarco's expert, Paul V. Rosasco, P.E., explained the meaning of these results in his expert report of January 27, 2014, stating:

nearly all of the railroad ballast chat samples obtained by Asarco from the Bonne Terre and Fredericktown sampling locations (Figures 2 and 4) contained lead and zinc at concentrations above their respective PECs and all of the samples obtained from rail line ballast in the Bonne Terre area (Figure 2) contained cadmium.

(Evans Decl., Ex. G at 17.)

This new evidence is precisely the type contemplated by the regulations that govern the reopening of STB proceedings, *i.e.* evidence that was not readily or reasonably available at the time of the underlying decision, that was clearly relevant to the STB's decision and its obligation to protect the integrity of its procedures in order to protect public health and safety for a safe and efficient national rail system. The new evidence shows there are elevated levels of harmful material stemming from the facts that: (1) the region referred to as the Southeast Missouri Lead District, which includes Bonne Terre, has elevated levels of arsenic, cadmium, cobalt, copper, lead, nickel, and zinc from the Mississippi Valley Type ore deposit found in the District; (2) the mines have been served by railroads since as early as 1859 to the present, moving such hazardous materials; (3) the railroad track ballast and sometimes the grades of the line were constructed using mining related waste materials, including chat (the waste of lead and zinc and also includes cadmium—all of which the Environmental Protection Agency ("EPA") has designated as hazardous); and (4) the erosion and dissolution of these materials from the railroad

track ballast has resulted in release, or threat of release, of these materials to surface water and sediment, resulting in harm to humans and particularly children. (Evans Decl., Ex. G at 15.)

Nearly all of the rail lines in St. Francois and Madison Counties are or were owned by Union Pacific or its predecessors (Evans Decl., Ex. G at Fig. 1 in Att. 3) and some are in use today by Union Pacific. Thus, UP has been fully aware of the hazardous materials in the area; and it is particularly troubling to the integrity of the Board's processes that UP would suggest there were no problems associated with health and safety, as UP had done in its representations to the Board during the expedited abandonment procedure.

Undoubtedly, UP was also aware of the fact that railroad track ballast and in some instances the grades of these railroad lines were constructed using mining-related waste materials, including chat, by all the railroads entering the mining districts in Missouri. (*See* Evans Decl., Ex. G at 9.) Mr. Rosasco personally observed the presence of chat/mining waste in the ballast of the rail beds and as fill material beneath railroad grades and within bridge abutments. (*See id.* at 10.) During his site visit, Mr. Rosasco also personally observed the erosion of that chat ballast and embankment fill from railroad lines and bridge abutments in St. Francois and Madison counties owned or previously abandoned by Union Pacific or its predecessors. (*Id.* at 19.)

The Asarco 2013 samplings also support the presence of chat/mining waste within the railroad ballast, embankment, and bridge abutment materials along active and abandoned rail lines in St. Francois and Madison Counties. Specifically, samples of railroad ballast obtained by NewFields in 2006 and Asarco in 2013 contained elevated levels of cadmium, lead and zinc. (*See* Evans Decl., Ex. G at 10-12.) Mr. Rosasco also noted that Asarco specifically collected samples of railroad ballast from property formerly owned by Union Pacific at the abandoned MR&BTRR rail line located adjacent to the Bonne Terre Tailings Site on City of Bonne Terre

property in St. Francois County. (*Id.* at 11.) In addition, a sample (SB-1) was obtained at a location on City of Bonne Terre property along this same rail line nearly 3,000 feet south-southwest of the tailings pile and analyzed for total and leachable metals. (*See id.* at 11.)

The results of both the NewFields and Asarco sampling of railroad ballast in St. Francois and Madison Counties detected the presence of elevated levels of cadmium, lead and zinc in the railroad ballast. (*Id.* at 10.) Nearly all of the lead results, most of the cadmium and one of the zinc results for the railroad ballast samples obtained by NewFields were elevated. (Evans Decl., Ex. G at 15.) Similarly, most of the lead results and many of the cadmium results for the railroad ballast samples obtained by Asarco also exceed EPA's risk-based level for industrial uses (EPA, 2013). (*Id.*) Mr. Rosasco also indicated that a comparison of the results of laboratory analyses of railroad ballast samples obtained by NewFields in 2006 (NewFields, 2007) and Asarco in 2013 and 2012 (Integer, 2012) to risk-based concentrations established by EPA and Missouri Department of Natural Resources ("MDNR") indicates that the presence of cadmium, lead and zinc poses a threat or potential threat to human health and the environment. (*See id.* at 14.)

In sum, nearly all of the railroad ballast chat samples obtained by Asarco from the Bonne Terre and Fredericktown sampling locations (*id.* at Figs. 2 & 4) contained lead and zinc at concentrations above their respective PECs and all of the samples obtained from rail line ballast in the Bonne Terre area (*Id.* at Fig. 2) contained cadmium at concentrations above its PEC. (*Id.* at 17.) In contrast, none of the results from the "control" soil samples obtained in the Leadwood area (Figure 3) contained cadmium, lead or zinc above the Probable Effect Levels ("PELs"). (*Id.*) Therefore, chat in railroad ballast beneath active or abandoned rail lines presents a threat or potential threat of release to the environment.

B. The Metals Being Released from the Line Are Harmful to Human Health and the Environment

EPA has designated those substances being by the chat used to construct the Line, such as cadmium, lead and zinc, as hazardous. 40 C.F.R. § 302.4. EPA further indicated that when left exposed to the environment, the lead in chat can be a hazard to human health (EPA, 2012a); that chat particles can enter soil, surface water, groundwater, and air (EPA, 2012a). (Evans Decl., Ex. G at 13.) As explained in Rosasco's report, exposure to lead has been known to cause learning disabilities and damage the human immune, blood and nervous systems (EPA, 2012a) and that children are the most susceptible to these effects (EPA, 2012a). (Evans Decl., Ex. G at 13.) Thus, EPA has indicated that the presence of elevated levels of lead, cadmium and zinc have resulted in threats or potential threats to human health and the environment. (*See id.* at 14.)

The unregulated release of these substances is also harmful to the environment. A study by the U.S. Fish and Wildlife Service ("USFWS") determined that elevated residues of lead, cadmium and zinc were found in every biological form examined—algae, rooted plants, crayfish, mussels and fish (Schmitt and Finger, 1982). (Evans Decl., Ex. G at 18.) The USFWS study also found that most of the metals in surface water derived from mine tailings are transported in the solid phase, and concentrations (as well as mass) in the suspended load increase with surface water flow (Schmitt and Finger, 1982). (*Id.*)

A U.S. Geological Survey ("USGS") found that about half of the ground-feeding songbirds in the SEMO mining district contained toxic levels of lead in their blood and internal organs (USGS, 2013, and Beyer, *et al.*, 2013). (*See id.* at 18.) The results of this study indicate that chat in railroad ballast presents a potential threat of release to the environment. (*See id.*) This study found that soil lead concentrations in SEMO were well above those that would be considered hazardous based on ecological risk assessment guidelines. (*See id.* at 19.)

The results of Petitioner's samplings when explained by the reliable sources, such as EPA, USFWS and USGS, in Mr. Rosasco's report, buttress his conclusion that:

Based upon findings and data documenting extensive use of mining waste by Union Pacific Railroad predecessors in Southeast Missouri, based upon testing of that abandoned mining waste used as ballast showing very high levels of lead and other metals, and based upon visible erosion of track ballast, embankments and bridge abutments, it is very likely that materials used to construct the existing and abandoned rail lines in the St. Francois and Madison Counties area are contaminated and causing environmental impacts in the SEMO Site.

(See *id.* at 20.)

Mr. Rosasco's conclusions unequivocally support Petitioner's request to reopen the proceeding and allow abandonment of the Line subject to proper sampling and environmental conditions to ensure the protection of human health and the environment. Further, given the extensiveness of his report, it is also appropriate that STB require the UP's provision of a report regarding the environmental condition of all other abandoned lines in SEMO it acquired in the Missouri Pacific acquisition.

V. THERE ARE SIGNIFICANT NATIONAL TRANSPORTATION POLICIES THAT SUPPORT REOPENING OF THIS PROCEEDING

The transportation policies of the United States will be advanced by the reopening of this proceeding. The National Transportation Policy states, among other things, that it is the policy of the United States Government to promote a safe and efficient rail transportation system and to ensure the development and continuation of a sound rail transportation system. 49 U.S.C. § 10101. The National Transportation Policy, formulated by Congress, was further enacted, as stated in its own terms, "to govern the [STB] in the administration and enforcement of all provisions of the Act," and to act as "the yardstick by which the correctness of the [STB]'s actions will be measured." *Schaffer Transp. Co. v. United States*, 355 U.S. 83, 87-88 (1957).

Unfortunately, as illustrated by Petitioner's new evidence, the Board's granting of the abandonment in this proceeding falls far short on that yardstick.

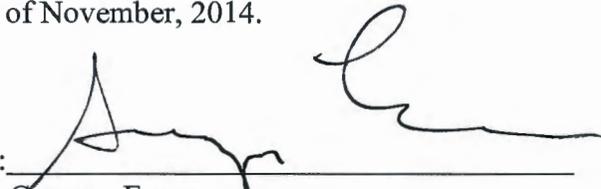
However, actions can be taken to render the appropriate decision regarding the abandonment of the Line. The Supreme Court has long emphasized that a federal agency, faced with new developments or in light of reconsideration of the relevant facts and its mandate, may alter its past interpretations and overturn past administrative rulings and practice. *Compare SEC v. Chenery Corp.*, 332 U.S. 194 (1947) *with FCC v. WOKO*, 329 U.S. 223 (1946). As such, the STB has a duty to exercise jurisdiction when "the over-riding interest of interstate commerce require it." *See Kalo Brick & Tile*, 450 U.S. 311, 320 (1981). The STB's duty here could not be clearer. To allow this decision, this abandonment, to stand based upon a foundation constructed with faulty evidence and material misrepresentations would be an injustice to the STB's precedent and the policies of this country. The reopening of this proceeding and the conditioning of this abandonment to ensure the advancement and protection of public health and safety would advance Congress' intent in enacting the National Transportation Policy.

CONCLUSION

Over a decade ago, Union Pacific took advantage of this Board's expedited procedures to dump 1.1 miles of track in Bonne Terre, Missouri. Years later, after paying tens of millions of dollars dedicated to the cleanup of Southeast Missouri, Asarco unearths the material fact that UP rail lines in SEMO—this Line in particular—is leaching metals, designated as hazardous substances by EPA, into the environment to the detriment of human health and the environment. This evidence cannot be ignored, and the previous decision cannot stand in the face of this new evidence. Petitioner's request to reopen the proceeding should be granted, and abandonment of the Line should only be allowed subject to proper sampling and all other steps necessary to

protect human health and the environment that the STB deems appropriate, in addition to provision of a report by UP regarding the environmental condition of all other abandoned lines in SEMO acquired by UP in the Missouri Pacific acquisition.

Respectfully submitted this 24th day of November, 2014.

By:  _____

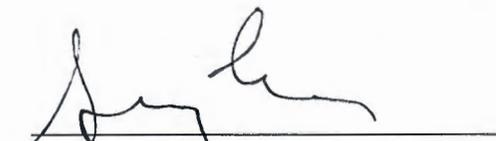
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Attorneys for ASARCO LLC

CERTIFICATE OF SERVICE

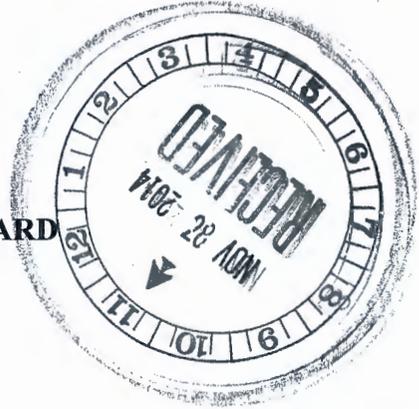
I hereby certify that I have served the foregoing Petition to Reopen by regular mail this 24th day of November, 2014, upon all parties of record on the STB's service list.

Type	Party Name	Address
Party of Record	Charles W. Saylor	1416 Dodge Street Room 830 Omaha, NE 68179-0001
Party of Record	Mack H. Shumate Jr.	101 North Wacker Drive Room 1920 Chicago, IL60606-1718
Non-Party	Governor of Missouri	State Capitol Building Jefferson City, MO 65101-1556
Non-Party	Missouri Department of Natural Resources	P.O. Box 176 Jefferson City, MO 65102
Non-Party	Missouri Department of Transportation	105 West Capitol Avenue P.O. Box 270 Jefferson City, MO 65102
Non-Party	Missouri Public Service Commission	200 Madison Street Jefferson City, MO 65102-0360
Non-Party	Missouri State Clearinghouse	P.O. Box 809 Jefferson City, MO 65102
Non-Party	U.S. Army Corps of Engineers	601 E. 12th Street Room 736 Kansas City, MO 64106-2896
Non-Party	U.S. Department of Transportation Federal Motor Carrier Safety Administration	1200 New Jersey Avenue, S.E. Washington DC 20590
Non-Party	U.S. Environmental Protection Agency, Region 7	901 North 5th Street Kansas City, KS 66101
Non-Party	U.S. Fish And Wildlife Service	101 Park De Ville Drive, #A Columbia, MO 65203-0007



Gregory Evans

**BEFORE THE
SURFACE TRANSPORTATION BOARD**



AB 33 (SUB-NO. 164X)

**UNION PACIFIC RAILROAD COMPANY
-ABANDONMENT EXEMPTION-
IN BONNE TERRE, MISSOURI**

**DECLARATION OF GREGORY EVANS IN SUPPORT OF
PETITION TO REOPEN**

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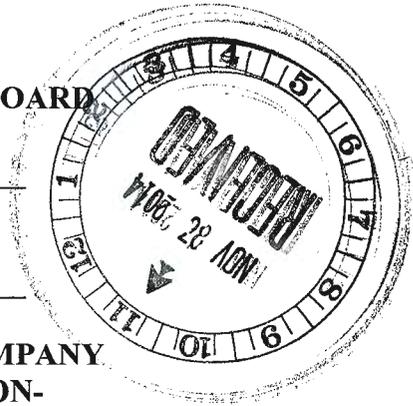
Dated: November 24, 2014

COLOR IMAGES INCLUDED

**BEFORE THE
SURFACE TRANSPORTATION BOARD**

AB 33 (SUB-NO. 164X)

**UNION PACIFIC RAILROAD COMPANY
-ABANDONMENT EXEMPTION-
IN BONNE TERRE, MISSOURI**



**DECLARATION OF GREGORY EVANS IN SUPPORT
OF PETITION TO REOPEN**

Gregory Evans, pursuant to 28 U.S.C. § 1746, makes the following declaration (the “Declaration”) under penalty of perjury.

1. I am an attorney at Integer Law Corporation (“Firm”). I am familiar with the above-captioned action, and the documents set forth below, through my representation of ASARCO LLC (“Asarco”). Based on my review of these documents in preparing this declaration, I have personal knowledge of the facts stated in this declaration.

2. I submit this declaration in support of Asarco’s Petition to Reopen.

3. Attached as Exhibit A is a true and correct copy of Union Pacific Railroad Company’s (“Union Pacific”) Notice of Abandonment Exemption filed on November 30, 2000 with the Surface Transportation Board (“STB”) in Docket No. Ab-33 (Sub-No. 164X) (“Notice”) for 1.1 miles of the Bonne Terre Industrial Lead in Bonne Terre, St. Francois County, Missouri (“Line”).

4. Attached as Exhibit B is a true and correct copy of the STB’s Order entered on December 8, 2000.

5. Attached as Exhibit C is a true and correct copy of Union Pacific's Notice of Consummation dated January 21, 2001.

6. Attached as Exhibit D is a true and correct copy of the Finding of No Significant Impact under 49 CFR 1105.10(g) entered by the STB on February 12, 2001.

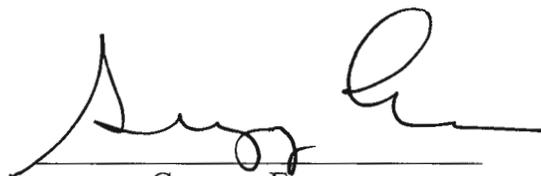
7. Attached as Exhibit E is a true and correct copy of the STB Memorandum dated December 21, 2000, recommending "No Conditions" on the abandonment based upon the STB's conclusion in its Environmental Assessment.

8. Attached as Exhibit F is a true and correct copy of the laboratory report prepared by Teklab, Inc. dated November 4, 2013, analyzing the samples collected by Asarco's consultants on the Line SB-2, SB-3 and SB-4.

9. Attached as Exhibit G is a true and correct copy of the expert report of Paul V. Rosasco, P.E. dated January 27, 2014.

10. Attached as Exhibit H is a true and correct copy of the map of the Line submitted by Union Pacific with its Notice of Abandonment Exemption filed on November 30, 2000, revised to include the sampling locations on the Line at issue.

I, Gregory Evans, declare under penalty of perjury that the foregoing is true and correct. Further, I certify that I am qualified and authorized to file this pleading. Executed on November 24, 2014.



Gregory Evans

EXHIBIT A

200769

01017110872

21.2
819

Law Department

UNION PACIFIC RAILROAD COMPANY

James P. Gallin, Esq.
General Attorney
(402) 271-2158
(402) 271-7107 (FAX)



1415 OCEAN STREET
SUITE 200
OAKLAND, CA 94612
FAX: (415) 771-5610

November 30, 2000



VIA UPS OVERNIGHT DELIVERY

Mr. Vernon Williams, Secretary
Surface Transportation Board
1025 "K" Street, N.W.
Washington, DC 20423-0001

**RE: Docket No. AB-33 (Sub-No. 164X), Union Pacific Railroad Company -
Abandonment Exemption - in Bonne Terre, Missouri**

Dear Mr. Williams:

Pursuant to the Board's exemption procedures for abandonment of rail lines with no local business for at least two years (49 C.F.R. 1152.50), enclosed are an original and ten (10) copies of a verified Notice of Exemption including a Certificate of Service and Publication.

Please file the Notice of Exemption in Docket No. AB-33 (Sub-No. 164X). Enclosed is our check for \$2,500.00 for the filing fee.

Sincerely yours,

James P. Gallin
James P. Gallin
General Attorney
(402) 271-2158
(402) 271-7107 (FAX)

ENTERED
Office of the Secretary

NOV 30 2000
Part of
Public Record

JPG/mis
Enclosures

FILED

NOV 30 2000

U.S. DEPARTMENT OF TRANSPORTATION

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ST. LOUIS
DIVISION

Before the
SURFACE TRANSPORTATION BOARD

Docket No. AB-33 (Sub-No. 154X)

UNION PACIFIC RAILROAD COMPANY
- ABANDONMENT EXEMPTION -
IN ST FRANCOIS COUNTY, MO
(BONNE TERRE INDUSTRIAL LEAD IN BONNE TERRE, MO)

ENTERED
Office of the Secretary

DEC 01 2000
Part 4
Public Record

NOTICE OF EXEMPTION

FILED

DEC 01 2000

UNION PACIFIC RAILROAD COMPANY

James P. Gatin, General Attorney
1416 Dodge Street #830
Omaha, Nebraska 68179
(402) 271-2158

Dated: November 30, 2000
Filed: December 1, 2000

Before the
SURFACE TRANSPORTATION BOARD

Docket No. AB-33 (Sub-No. 164X)

UNION PACIFIC RAILROAD COMPANY
- ABANDONMENT EXEMPTION -
IN ST FRANCOIS COUNTY, MO
(BONNE TERRE INDUSTRIAL LEAD IN BONNE TERRE, MO)

NOTICE OF EXEMPTION

Union Pacific Railroad Company ("UP") submits this verified Notice of Exemption pursuant to 49 C.F.R. § 1152, Subpart F - Exempt Abandonments and Discontinuances of Service and Trackage Rights, for an exempt abandonment from milepost 31.20 to milepost 30.10, a distance of 1.10 miles, over the Bonne Terre Industrial Lead in Bonne Terre, St. Francois County, Missouri (the "Line").

Proposed Consummation Date: 49 C.F.R. § 1152.59(d)(2)

The abandonment is proposed to be consummated on or after January 22, 2001 (at least 50 days after filing the Notice of Exemption).

Certification: 49 C.F.R. § 1152.59(b)

UP certifies that no local traffic has moved over the Line for at least two years; and that no formal complaint filed by a user of rail service on the Line (or filed by a state or local governmental entity acting on behalf of such user) regarding cessation of service over the Line either is pending with this Board or any U.S. District Court or has

been decided in favor of the complainant within the two-year period. The Applicants further clarify that there is no overhead traffic moving on the Line.

**Additional Information Required:
49 C.F.R. § 5.1182.22(a)(1)-(4), (7)-(8) and (e)(4)**

(a) **General.**

(a)(1) The railroad's exact name is Union Pacific Railroad Company.

(a)(2) UP is a common carrier by railroad subject to 49 U.S.C. Subtitle IV, Chapter 105.

(a)(3) UP intends to abandon the Bonne Terre Industrial Lead from milepost 31.20 to milepost 30.10, a distance of 1.10 miles, in Bonne Terra, St. Francois County, Missouri (the "Line").

(a)(4) A map showing the location of the Line in conjunction with other rail lines, highways and major roads in the area is attached as **Exhibit A**.

(a)(7) The representative to whom correspondence regarding this abandonment should be sent is:

James P. Galin, General Attorney
Union Pacific Railroad Company
1416 Dodge Street, Room 830
Omaha, Nebraska 68179
Tel. (402) 271-2158

(a)(8) ZIP Code. The Line traverses U. S. Postal Service Zip Code 63628.

(e)(4) Rural and Community Impact. The right of way of the southern portion of the Line, from milepost 31.20 (Depot area) to milepost 30.8 (Benham St. - State Hwy 47), varies in width. South of Oak Street, it is approximately 50 feet in width. North of Oak Street the right of way is approximately 75 feet in width to a point approximately 900 feet

northerly of Oak Street. The right of way then widens further to approximately 185 feet in width as it joins the south line of Benham Street (State Hwy 47). The topography is level and adjacent land uses are light industrial.

The right of way of the northern portion of the Line, from milepost 30.8 to milepost 30.1, varies from 30 feet in width at Benham Street to 100 feet in width at milepost 30.1, the end of the Line. Topography is level at milepost 30.8 and continues into a small cut as it runs northerly. Right of way in this area has been sold to industrial users, resulting in track removal. Adjacent uses include industrial and former lead mine operations. Based on information in our possession, the Line does not contain federally granted rights-of-way. Any documentation in our possession will be made available promptly to those requesting it.

Labor Protection

The interests of railroad employees will be protected by the conditions discussed in Oregon Short Line Railroad Co. - Abandonment - Gresham, 360 ICC 91 (1979).

Certifications

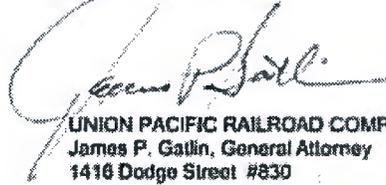
Attached as Exhibit B is a Certificate of Service and Publication pursuant to the notice requirements of 49 C.F.R. §§ 1152.50(d)(1), 1105.11 and 1105.12.

Environmental and Historic Report

The Combined Environmental and Historic report containing the information required by 40 C.F.R. §§ 1105.7 (a) and 1105.8 is attached hereto as Exhibit C. The original and ten (10) copies were sent to Ms. Elaine Kaiser, Section of Environmental Analysis (SEA), on November 13, 2000.

Dated this 30th day of November, 2000.

Respectfully submitted,



UNION PACIFIC RAILROAD COMPANY
James P. Gallin, General Attorney
1416 Dodge Street #830
Omaha, Nebraska 68179
(402) 271-2158

VERIFICATION

Docket No. AB-33 (Sub-No. 164X)

STATE OF NEBRASKA)
) ss.
COUNTY OF DOUGLAS)

RAYMOND E. ALLAMONG, JR., makes oath and says that he is Manager-Rail Line Planning of Union Pacific Railroad Company; that he has examined all of the statements in the foregoing Notice of Exemption in Docket No. AB-33 (Sub-No. 164X), to abandon the Bonne Terre Industrial Lead in St. Francois County, Missouri; that he has knowledge of the facts and matters relied upon in the Notice; and that all representations set forth therein are true to the best of his knowledge, information and belief.

Raymond E. Allamong, Jr.
Raymond E. Allamong, Jr.

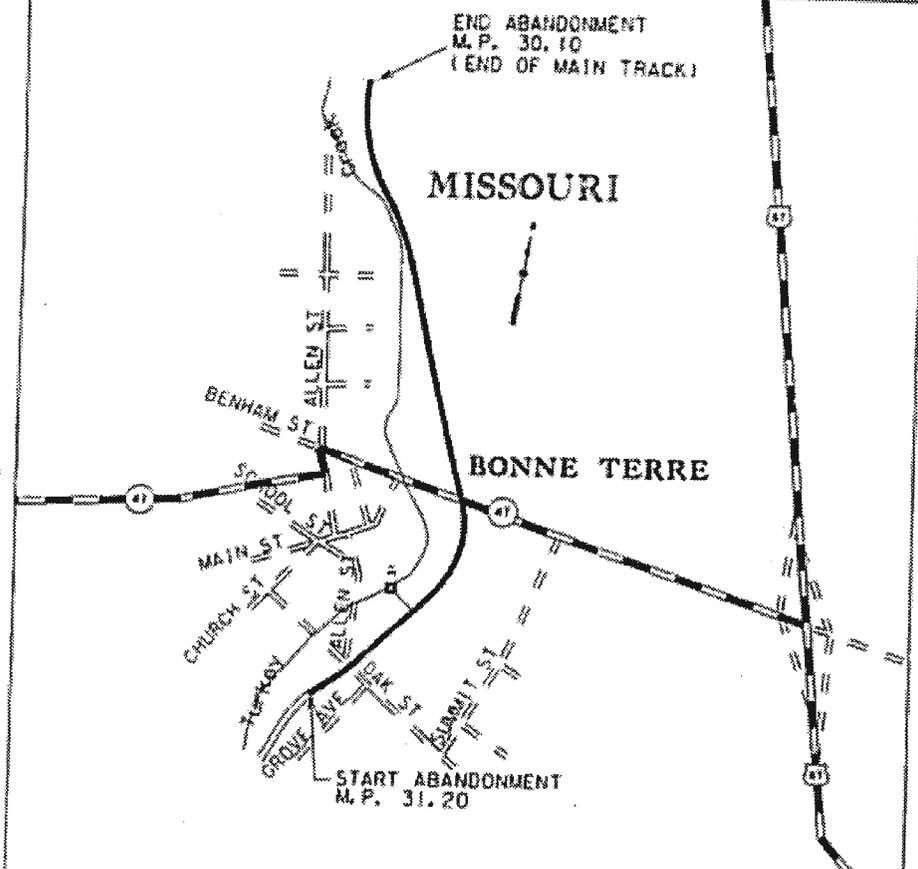
Subscribed and sworn to before me a Notary Public in and for the State and County above named, this 28th day of November, 2000

Nelda Hill
Notary Public

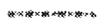
My Commission Expires:
GENERAL NOTARY SEAL OF NEBRASKA
NELDA HILL
My Comm. Exp. 04/11/2001

© 2000 BY THE STATE OF NEBRASKA

AR-33 (Sub-No. 164E)
EXHIBIT A

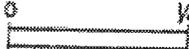


LEGEND

-  UPRR LINES TO BE ABANDONED
-  OTHER UPRR LINES
-  OTHER RAILROADS
-  50+ YEAR OLD STRUCTURES
-  PRINCIPAL HIGHWAYS
-  OTHER ROADS

Bonne Terre Industrial Lead
M.P. 30.10 TO M.P. 31.20
BONNE TERRE INDUSTRIAL LEAD A TOTAL OF 1.1 MILES
IN ST. FRANCIS COUNTY, MISSOURI

UNION PACIFIC RAILROAD CO.
BONNE TERRE INDUSTRIAL LEAD
INCL. 50+ YEAR OLD STRUCTURES

SCALE  MILES

0027
July 18, 2000

DOCKET NO. AB-33 (SUB-NO. 164X)
Bonne Terre Industrial Lead in St. Francois County, MO

CERTIFICATE OF SERVICE AND PUBLICATION

49 C.F.R. § 1152.50(d)(1) - Notice

The undersigned certifies that on November 20, 2000 (at least 10 days before a Notice of Exemption is filed), written notice was given of Union Pacific's intent to use the exemption notice procedure to abandon the Bonne Terre Industrial Lead in St. Francois County, Missouri in Docket No. AB-33 (Sub-No. 164X). Written notice (a copy of which is attached hereto as Attachment 1) was served on the following:

Director
Div. of Motor Carrier and Railroad Safety
P.O. Box 1216
Jefferson City, MO 65102

Chief Engineer
Highway and Transportation Department
P.O. Box 270
Jefferson City, MO 65102

National Park Service
William D. Shaddox
Chief, Land Resources Division
800 North Capitol Street, N.E., Room 540
Washington, D.C. 20002

U.S. Department of Agriculture
Chief of the Forest Service
4th Floor NW, Auditors Bldg.
14th Street & Independence Ave., SW
Washington, D.C. 20250

Military Traffic Management Command
Transportation Engineering Agency
Attn: Railroads for National Defense
720 Thimble Shoals Blvd., Suite 130
Newport News, VA 23606-2574

49 C.F.R. § 1105.11 - Transmittal Letter For Applicant's Report

The undersigned certifies that on November 10, 2000 (at least 20 days before a Notice of Exemption is filed), a Combined Environmental and Historic Report

Before the
SURFACE TRANSPORTATION BOARD

Docket No. AB-33 (Sub-No. 164X)

UNION PACIFIC RAILROAD COMPANY
- ABANDONMENT EXEMPTION -
IN ST FRANCOIS COUNTY, MO
(BONNE TERRE INDUSTRIAL LEAD IN BONNE TERRE, MO)

Combined Environmental and Historic Report

UNION PACIFIC RAILROAD COMPANY

James P. Gatlin, General Attorney
1416 Dodge Street #830
Omaha, Nebraska 68179
(402) 271-2158

Dated: November 10, 2000

Before the
SURFACE TRANSPORTATION BOARD

Docket No. AB-33 (Sub-No. 164X)

UNION PACIFIC RAILROAD COMPANY
-- ABANDONMENT EXEMPTION --
IN ST FRANCOIS COUNTY, MO
(BONNE TERRE INDUSTRIAL LEAD IN BONNE TERRE, MO)

Combined Environmental and Historic Report

Union Pacific Railroad Company ("UP") submits this Combined Environmental and Historic Report pursuant to 49 C.F.R. § 1105.7(e) and 49 C.F.R. § 1105.8(d), respectively, for an exempt abandonment from milepost 31.20 to milepost 30.10, a distance of 1.10 miles, over the Bonne Terre Industrial Lead in Bonne Terre, St. Francois County, Missouri (the "Line").

The Line traverses U. S. Postal Service Zip Code 63626. A Notice of Exemption to abandon the Line pursuant to 49 C.F.R. § 1152.50 (no local traffic for at least two years) will be filed on or after December 1, 2000.

A map of the Line is attached as Attachment No. 1. UP's letter to federal, state and local government agencies is marked Attachment No. 2. Responses received to UP's letter to date are attached and sequentially numbered as indicated below.

ENVIRONMENTAL REPORT
49.C.F.R. § 1105.7(e)

(1) **Proposed action and alternatives.** Describe the proposed action, including commodities transported, the planned disposition (if any) of any rail line and other structures that may be involved, and any possible changes in current operations or maintenance practices. Also describe any reasonable alternatives to the proposed action. Include a readable, detailed map and drawings clearly delineating the project.

Response: The proposed action involves the abandonment by UP of the Bonne Terre Industrial Lead from milepost 31.20 to milepost 30.10, a distance of 1.10 miles in Bonne Terre, St. Francois County, Missouri. There are no shippers on the Line, and no commodities have moved over the Line for over two years.

The northern portion of the Line from State Highway 47 (approximately milepost 30.8) to milepost 30.10 was constructed by the Saint Joseph Lead Company in 1888. The southern portion of the Line from milepost 31.20 to State Highway 47 was constructed by the Mississippi River and Bonne Terre Railway in 1892. Both sections were converted to standard gauge in 1894. The southern portion of the Line is constructed with 90-pound track material. The track has been removed from the northern portion of the Line.

There appears to be no reasonable alternative to the abandonment. There is no local or overhead traffic.

Based on information in the Applicants' possession, the southern portion of the Line contains approximately 4.22 acres of non-reversionary property. The northern portion of the Line contains approximately 5.51 acres of reversionary property.

A map of the Line is attached as Attachment No. 1.

(2) **Transportation system.** Describe the effects of the proposed action on regional or local transportation systems and patterns. Estimate the amount of traffic

(passenger or freight) that will be diverted to other transportation systems or modes as a result of the proposed action.

Response: There will be no effect on regional or local transportation systems and patterns and no diversion of traffic to other transportation systems or modes.

The subject Line has not been used for freight traffic for at least two years.

(3) **Land use.** (i) Based on consultation with local and/or regional planning agencies and/or a review of the official planning documents prepared by such agencies, state whether the proposed action is consistent with existing land use plans. Describe any inconsistencies.

(ii) Based on consultation with the U.S. Soil Conservation Service, state the effect of the proposed action on any prime agricultural land.

(iii) If the action affects land or water uses within a designated coastal zone, include the coastal zone information required by § 1105.9.

(iv) If the proposed action is an abandonment, state whether or not the right-of-way is suitable for alternative public use under 49 U.S.C. § 10905 and explain why.

Response: (i) Applicants are unaware of any adverse effects on local and existing land use plans. The City of Bonne Terre states that the proposed abandonment complies with the City's general planning policy(ies), and State of Missouri Office of Administration states that the Missouri Federal Assistance Clearinghouse, in cooperation with state and local agencies interested or possibly affected, has completed the review of the proposed abandonment and none of the agencies involved had comments or recommendations to offer. The City of Bonne Terre's and the State Office of Administration's responses are attached as Attachment 3 and Attachment 4, respectively.

(ii) The United States Department of Agriculture Natural Resources Conservation Service stated that the proposed abandonment will have no impact on prime agricultural land. The USDA response is attached as Attachment 5.

(iii) The Line is not in a state coastal zone.

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(iv) It is not likely that any of the right of way proposed for abandonment is suitable for other public purposes since the abandonment involves such a short segment and there doesn't appear to be a need for another north/south street in this section of Bonne Terre. The title to the right of way north of Highway 47 appears to be reversionary in nature and since the track has been removed from the area north of Highway 47, UP may have already lost any interest it had in this portion of the right of way to adjoining land owners.

(4) **Energy.** (i) Describe the effect of the proposed action on transportation of energy resources.

(ii) Describe the effect of the proposed action on recyclable commodities.

(iii) State whether the proposed action will result in an increase or decrease in overall energy efficiency and explain why.

(iv) If the proposed action will cause diversions from rail to motor carriage of more than:

(A) 1,000 rail carloads a year, or

(B) an average of 50 rail carloads per mile per year for any part of the affected line, quantify the resulting net change in energy consumption and show the data and methodology used to arrive at the figure given.

Response: (i) There are no effects on the transportation of energy resources in view of the absence of rail shipments on the Line.

(ii) There are no recyclable commodities moved over the Line.

(iii) There will be no increase in energy consumption from the abandonment.

(iv)(A)(B) There will be no rail-to-motor diversion.

(5) **Air.** (i) If the proposed action will result in either:

(A) an increase in rail traffic of at least 100% (measured in gross ton miles annually) or an increase of at least eight trains a day on any segment of rail line affected by the proposal, or

(B) an increase in rail yard activity of at least 100% (measured by carload activity), or

(C) an average increase in truck traffic of more than 10% of the average daily traffic or 50 vehicles a day on any affected road segment, quantify the anticipated effect on air emissions. For a proposal under 49 U.S.C. § 10901 (or § 10505) to construct a new line or reinstitute service over a previously abandoned line, only the eight train a day provision in §§ (5)(i)(A) will apply.

Response: There is no such effect anticipated.

(5) **Air.** (ii) If the proposed action affects a class 1 or nonattainment area under the Clean Air Act, and will result in either:

(A) an increase in rail traffic of at least 50% (measured in gross ton miles annually) or an increase of at least three trains a day on any segment of rail line, or

(B) an increase in rail yard activity of at least 20% (measured by carload activity),
or

(C) an average increase in truck traffic of more than 10% of the average daily traffic or 50 vehicles a day on a given road segment, then state whether any expected increased emissions are within the parameters established by the State Implementation Plan. However, for a rail construction under 49 U.S.C. § 10901 (or 49 U.S.C. § 10505), or a case involving the reinstatement of service over a previously abandoned line, only the three train a day threshold in this item shall apply.

Response: There will be no increase in rail traffic, rail yard activity, or truck traffic as a result of the proposed action.

(6) **Air.** (iii) If transportation of ozone depleting materials (such as nitrogen oxide and freon) is contemplated, identify: the materials and quantity; the frequency of service; safety practices (including any speed restrictions); the applicant's safety record (to the extent available) on derailments, accidents and spills; contingency plans to deal with accidental spills; and the likelihood of an accidental release of ozone depleting materials in the event of a collision or derailment.

Response: The proposed action will not affect the transportation of ozone depleting materials.

(6) **Noise.** If any of the thresholds identified in item (5)(i) of this section are surpassed, state whether the proposed action will cause:

(i) an incremental increase in noise levels of three decibels Ldn or more or
(ii) an increase to a noise level of 65 decibels Ldn or greater. If so, identify sensitive receptors (e.g., schools, libraries, hospitals, residences, retirement communities, and nursing homes) in the project area and quantify the noise increase for these receptors if the thresholds are surpassed.

Response: Not applicable.

(7) **Safety.** (i) Describe any effects of the proposed action on public health and safety (including vehicle delay time at railroad grade crossings).

(ii) If hazardous materials are expected to be transported, identify: the materials and quantity; the frequency of service; whether chemicals are being transported that, if mixed, could react to form more hazardous compounds; safety practices (including any speed restrictions); the applicant's safety record (to the extent available) on derailments, accidents and hazardous spills; the contingency plans to deal with accidental spills; and the likelihood of an accidental release of hazardous materials.

(iii) If there are any known hazardous waste sites or sites where there have been known hazardous materials spills on the right-of-way, identify the location of those sites and the types of hazardous materials involved.

Response: (i) The proposed action will have no detrimental effects on public health and safety.

(ii) The proposed action will not affect the transportation of hazardous materials.

(iii) There are no known hazardous material waste sites or sites where known hazardous material spills have occurred on or along the subject right-of-way.

(8) Biological resources. (i) Based on consultation with the U.S. Fish and Wildlife Service, state whether the proposed action is likely to adversely affect endangered or threatened species or areas designated as a critical habitat, and if so, describe the effects.

(ii) State whether wildlife sanctuaries or refuges, or any National or State parks or forests will be affected, and describe any effects.

Response: (i) The U. S. Fish and Wildlife Service has been contacted. To date UP has received no response.

(ii) Applicants are not aware of any wildlife sanctuaries or refuges, or any National or State parks or forests that will be affected by the proposed abandonment.

(9) Water. (i) Based on consultation with State water quality officials, state whether the proposed action is consistent with applicable Federal, State or local water quality standards. Describe any inconsistencies.

(ii) Based on consultation with the U.S. Army Corps of Engineers, state whether permits under section 404 of the Clean Water Act (33 U.S.C. § 1344) are required for the proposed action and whether any designated wetlands or 100-year flood plains will be affected. Describe the effects.

(iii) State whether permits under section 402 of the Clean Water Act (33 U.S.C. § 1342) are required for the proposed action. (Applicants should contact the U.S.

Environmental Protection Agency or the state environmental protection or equivalent agency if they are unsure whether such permits are required.)

Response: (i) There are no anticipated adverse effects on water quality.

The Missouri Department of Natural Resources been contacted, but no response has been received.

(ii) The U.S. Army Corps of Engineers has been contacted, but no response has been received.

(iii) It is not anticipated there will be any requirements for Section 402 permits.

(10) **Proposed Mitigation.** Describe any actions that are proposed to mitigate adverse environmental impacts, indicating why the proposed mitigation is appropriate.

Response: There are no known adverse environmental impacts.



Parkade Center, Suite 250
601 Business Loop 70 West
Columbia, Missouri 65203

Boxlet AB-33 (164X)
Attachment 5

July 27, 2000

Mr. Chuck Saylor
1416 Dodge Street, Room 830
Omaha, NE 68178

Dear Mr. Saylor,

I have reviewed the Proposed Abandonment of the Bonne Terre Industrial Lead in Bonne Terre, St. Francois County, Missouri, dated July 19, 2000. I have determined that the proposed action will have no effect on prime agricultural land. The Soil Survey of St. Francois County, Missouri indicates that the entire Bonne Terre Industrial Lead is situated on non-prime farmland soil mapping units.

Thank you for the opportunity to review this proposal and please be informed that future correspondence to this office should reference the USDA Natural Resources Conservation Service rather than the U.S. Soil Conservation Service.

DENNIS K. POTTER
State Soil Scientist

RECEIVED
JUL 28 2000
NATIONAL
SOIL CONSERVATION
SERVICE

or equivalent

water quality.

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response has

12 permits.

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mitigation is

acts.

HISTORIC REPORT
49 C.F.R. § 1105.8(d)

(1) A U.S.G.S. topographic map (or an alternate map drawn to scale and sufficiently detailed to show buildings and other structures in the vicinity of the proposed action) showing the location of the proposed action, and the locations and approximate dimensions of railroad structures that are 50 years old or older and are part of the proposed action:

Response: See Attachment No. 1.

(2) A written description of the right-of-way (including approximate widths to the extent known), and the topography and urban and/or rural characteristics of the surrounding area:

Response: From milepost 31.20 (Depot area) to milepost 30.8 (Benham St. - Hwy 47), the right of way varies in width. The right of way on the south side of Oak Avenue is approximately 50 feet in width. Starting on the north side of Oak Avenue the right of way is approximately 75 feet in width to a point approximately 900 feet northerly of Oak Avenue. The right of way then widens further to approximately 185 feet in width as it adjoins the south line of Benham Street (Hwy 47). The topography is level and adjacent land uses are light industrial. From milepost 30.8 to milepost 30.1, the right of way varies from 30 feet in width at Benham Street to 100 feet in width at milepost 30.1. Topography is level at milepost 30.8 and continues into a small cut as it runs northerly. Right of way in this area has been sold to industrial users, resulting in track removal. Adjacent uses include industrial and former lead mine operations.

(3) Good quality photographs (actual photographic prints, not photocopies) of railroad structures on the property that are 50 years old or older and of the immediately surrounding area:

Response: There are no railroad structures 50 years old or older.

(4) The date(s) of construction of the structure(s), and the date(s) and extent of any major alterations to the extent such information is known:

Response: Not applicable.

(5) A brief narrative history of carrier operations in the area, and an explanation of what, if any, changes are contemplated as a result of the proposed action:

Response: See the preceding pages for a brief history and description.

There have been no rail operations over the Line for at least two years. No changes in carrier operations are contemplated.

(6) A brief summary of documents in the carrier's possession, such as engineering drawings, that might be useful in documenting a structure that is found to be historic:

Response: Not applicable.

(7) An opinion (based on readily available information in the railroad's possession) as to whether the site and/or structures meet the criteria for listing on the National Register of Historic Places (36 C.F.R. § 60.4), and whether there is a likelihood of archeological resources or any other previously unknown historic properties in the project area, and the basis for those opinions (including any consultations with the State Historic Preservation Office, local historical societies or universities):

Response: Not applicable.

(8) A description (based on readily available information in the railroad's possession) of any known prior subsurface ground disturbance or fill, environmental conditions (naturally occurring or manmade) that might affect the archeological recovery of resources (such as swampy conditions or the presence of toxic wastes), and the surrounding terrain:

Response: Applicants do not have any such readily available information.

(9) Within 30 days of receipt of the historic report, the State Historic Preservation Officer may request the following additional information regarding specified nonrailroad owned properties or groups of properties immediately adjacent to the railroad right-of-way. Photographs of specified properties that can be readily seen from the railroad right-of-way (or other public rights-of-way adjacent to the property) and a written description of any previously discovered archeological sites, identifying the locations and type of the site (i.e., prehistoric or native American):

Response: Not applicable.

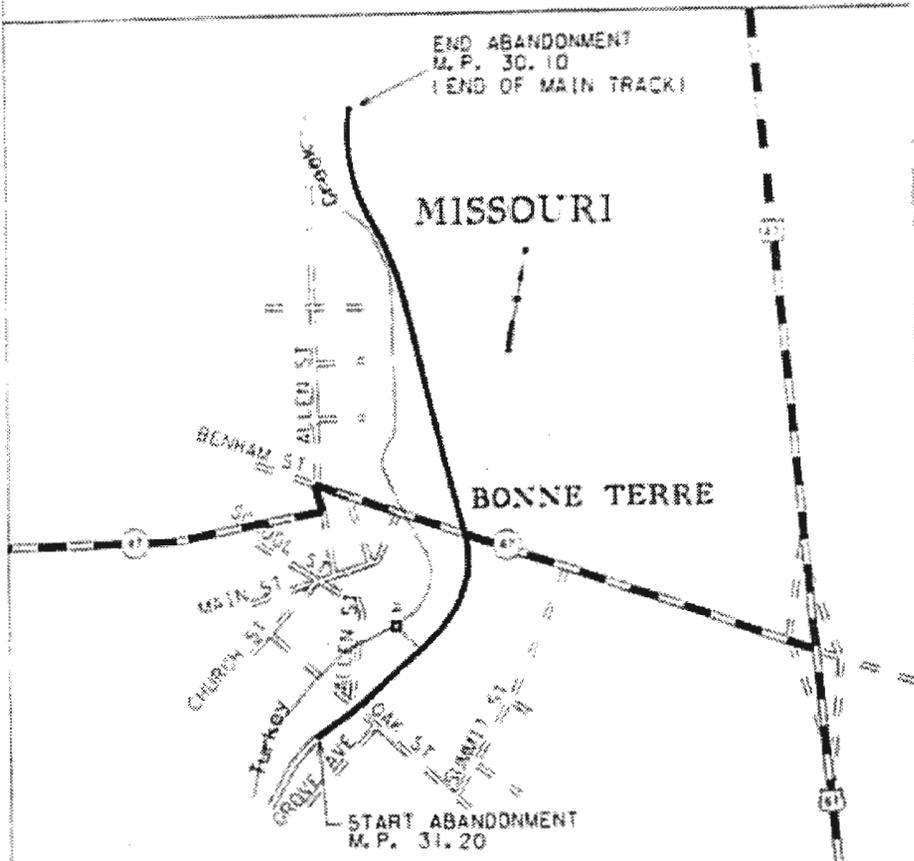
Dated this 10th day of November, 2000.

Respectfully submitted,



UNION PACIFIC RAILROAD COMPANY
James P. Gatin, General Attorney
1416 Dodge Street #830
Omaha, Nebraska 68179
(402)271-2158

Docket AB-33 (Sub 162X)
Attachment 1



- LEGEND**
- UPRR LINES TO BE ABANDONED
 - OTHER UPRR LINES
 - OTHER RAILROADS
 - 50+ YEAR OLD STRUCTURES
 - PRINCIPAL HIGHWAYS
 - OTHER ROADS

Bonne Terre Industrial Lead
UNION PACIFIC RAILROAD CO.
BONNE TERRE INDUSTRIAL LEAD
INCL. 50+ YEAR OLD STRUCTURES

SCALE MILES

05027
July 18, 2000

July 19, 2000

File: Track Abandonment
Bohns Terre, MO. Industrial Lead

State Charishoumial
Lois Pohl
Federal Assistance Clearinghouse
Office of Administration
Division of General Services
P.O. Box 809
Jefferson City, MO 65102

State Environmental Protection Agency
Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

State Coastal Zone Management Agency
Not Applicable

Head of each County
St. Francois County offices,
Courthouse
203 W Columbia St.
Farmington, MO 63640

Environmental Protection Agency
Regional Office
U. S. EPA, Region 711
901 North 5th Street
Kansas City, Kansas 64101

U.S. Fish and Wildlife
U.S. Fish and Wildlife Service
Region 1,
One Federal Drive
Federal Building
Fort Snelling, MN 55111

U.S. Army Corps of Engineers
U.S. Army Engineer District, St.
Louis
1222 Spruce St.
St. Louis, MO 63103-2813

National Park Service
William D. Shadock, Chief
Land Resources Division
National Park Service
800 Capital Street, NE, Room 500
Washington, D.C. 20002

U.S. Natural Resources Conservation
Service
Natural Resources Conservation Service
Parkdale Center, Suite 250
601 Business Loop 70 W
Columbia, MO 65203-2546

National Geodetic Survey
Edward J. Kelly, Chief
Special Reference System Division
National Geodetic Survey
ROMA H/NGS
1315 East-West Highway
Silver Spring, MD 20910-1382

Other Agencies Consulted
City Manager
City of Bohns Terre
1 North Wood Street, Apt. A
Bohns Terre, MO 63828-1387

RE: Proposed Abandonment of the Bonne Terre Industrial Lead
in Bonne Terre, St. Francois County, Missouri.

Dear Sirs:

Union Pacific Railroad Company plans to request authority from the Surface Transportation Board (STB) to abandon its Bonne Terre Industrial Lead from M.P. 31.20 to M.P. 30.1 in Bonne Terre, in the State of Missouri. A map of the proposed track abandonment shown in black is attached.

Pursuant to the STB's regulations at 49 C.F.R. Part 1152, and the environmental regulations at 49 C.F.R. Part 1105.7, this is to request your assistance in identifying any potential effects of this action as indicated in the paragraphs below. If any adverse environmental impacts are identified, describe any actions that are proposed in order to mitigate the environmental impacts. Please provide us with a written response that can be included in an Environmental Report, which will be sent to the STB.

LOCAL AND/OR REGIONAL PLANNING AGENCIES. State whether the proposed action is consistent with existing land use plans. Describe any inconsistencies.

U.S. SOIL CONSERVATION SERVICE. State the effect of the proposed action on any prime agricultural land.

U.S. FISH AND WILDLIFE SERVICE (And State Game And Parks Commission, if Addressed). State (1) whether the proposed action is likely to adversely affect endangered or threatened species or areas designated as a critical habitat, and if so, describe the effects, and, (2) whether wildlife sanctuaries or refuges, National or State parks or forests will be affected, and describe any effects.

STATE WATER QUALITY OFFICIALS. State whether the proposed action is consistent with applicable Federal, State or Local water quality standards. Describe any inconsistencies.

U.S. ARMY CORPS OF ENGINEERS. State (1) whether permits under Section 404 of the Clean Water Act (33 U.S.C. § 1344) are required for the proposed action and (2) whether any designated wetlands or 100-year flood plains will be affected. Describe the effects.

U.S. ENVIRONMENTAL PROTECTION AGENCY AND STATE ENVIRONMENTAL PROTECTION (OR EQUIVALENT AGENCY). (1) Identify any potential effects on the surrounding area, (2) identify the location of

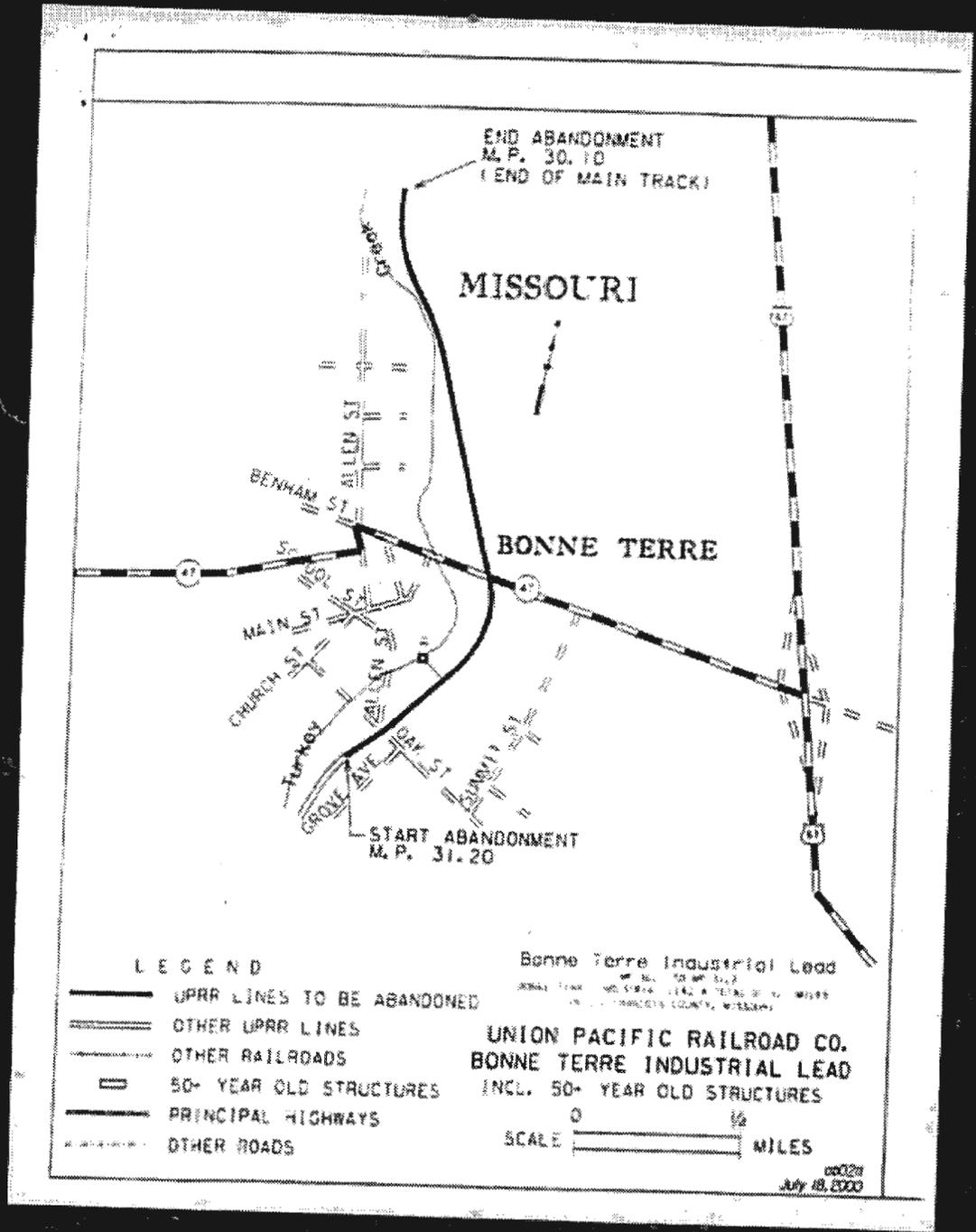
hazardous waste sites and known hazardous material spills on the right-of-way and list the types of hazardous materials involved, and (3) state whether permits under Section 402 of the Clean Water Act (33 U.S.C. § 1342) are required for the proposed action.

Thank you for your assistance. Please send your reply to Union Pacific Railroad, Mr. Chuck Saylor, 1416 Dodge Street, Room 830, Omaha, NE, 68179. If you need further information, please contact me at (402) 271-4078.

Yours truly,


Harry P. Patterson, P. E.
Manager Environmental Field Operations

Attachment





CITY OF BONNE TERRE

A Council-Manager City

(573) 358-2254
Fax (573) 358-1525

#1A Northwood Drive • P.O. Box 418
Bonne Terre, Missouri 63628

August 10, 2000

Union Pacific Railroad
1416 Dodge Street
Room 330
Omaha, NE 68179

Attn: Chuck Saylor

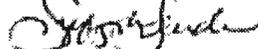
Re: Track abandonment, Bonne Terre Industrial Lead

Dear Mr. Saylor:

The City of Bonne Terre states that the proposed abandonment complies with the City's general planning policy(ies). The City has property adjacent to parts of the proposed abandonment, and the City's Industrial Development Authority also owns adjacent property.

The City of Bonne Terre hereby formally requests that Union Pacific Railroad, upon abandonment of the Bonne Terre Industrial Lead, presents the property to the City

Very Truly Yours,


Jeffrey L. Jude
City Manager

Mel Carnahan
Governor



Richard A. Hanson
Commissioner

State of Missouri
OFFICE OF ADMINISTRATION
Post Office Box 809
Jefferson City
65102

Stan Perowich
Director
Division of General Services

August 14, 2000

Chuck Saylor
Union Pacific Railroad
1416 Dodge Street, Room 830
Omaha, NE 68179

Dear Mr. Saylor:

Subject: 0007098 - Union Pacific Railroad Company
Proposed Abandonment of the Bonne Terre Industrial Lead in
Bonne Terre, St. Francois County, MO

The Missouri Federal Assistance Clearinghouse, in cooperation with state and local agencies interested or possibly affected, has completed the review on the above project application.

None of the agencies involved in the review had comments or recommendations to offer at this time. This concludes the Clearinghouse's review.

A copy of this letter is to be attached to the application as evidence of compliance with the State Clearinghouse requirements.

Sincerely,

A handwritten signature in cursive script, appearing to read "Lois Pahl".

Lois Pahl, Coordinator
Missouri Clearinghouse

LP:cm

cc: Southeast Missouri Regional Planning Commission



Natural Resources Conservation Service

Parkade Center, Suite 250
601 Business Loop 70 West
Columbia, Missouri 65203

De-kec AB-33 (1642)
Attachment 5

July 27, 2000

Mr. Chuck Saylor
1416 Dodge Street, Room 830
Omaha, NE 68179

Dear Mr. Saylor,

I have reviewed the Proposed Abandonment of the Bonne Terre Industrial Lead in Bonne Terre, St. Francois County, Missouri, dated July 19, 2000. I have determined that the proposed action will have no effect on prime agricultural land. The Soil Survey of St. Francois County, Missouri indicates that the entire Bonne Terre Industrial Lead is situated on non-prime farmland soil mapping units.

Thank you for the opportunity to review this proposal and please be informed that future correspondence to this office should reference the USDA Natural Resources Conservation Service rather than the U.S. Soil Conservation Service.

DENNIS K. POTTER
State Soil Scientist

The Natural Resources Conservation Service
formerly the Soil Conservation Service
is an agency of the United States Department of Agriculture.

AN EQUAL OPPORTUNITY EMPLOYER





**CERTIFICATE OF SERVICE
OF THE
COMBINED ENVIRONMENTAL AND HISTORIC REPORT**

The undersigned hereby certifies that a copy of the foregoing Combined Environmental and Historic Report in Docket No. AB-33 (Sub-No. 164X), the Barons Terre Industrial Land in Bonne Terre, St. Francois County, Missouri was served by first class mail on the 10th day of November, 2000 on the following:

- State Cleanrooms for alternate):**
Lisa Poff
Federal Assistance Clearinghouse
Office of Administration
Division of General Services
P.O. Box 808
Jefferson City, MO 65102
- State Environmental Protection Agency:**
Department of Natural Resources
P. O. Box 176
Jefferson City, MO 65102
- State Coastal Zone Management Agency:**
(If Applicable):
Not applicable.
- Head of County (Planning):**
St. Francois County Offices, Courthouse
202 W. Columbia St.
Farrington, MO 63640
- Environmental Protection Agency:**
(Regional Office):
U.S. Environmental Protection Agency
Region VII
901 North 9th Street
Kansas City, Kansas 66101
- U.S. Fish and Wildlife:**
U.S. Fish & Wildlife Service
Region 3,
One Federal Drive
Federal Building
Fort Snelling, MN 55111
- U.S. Army Corps of Engineers:**
U.S. Army Engineer District, St. Louis
1222 Spruce St.
St. Louis, MO 63103-2833
- National Park Service:**
National Park Service
William D. Shoemaker
Chief, Land Resources Division
850 North Capitol Street, NE., Room 500
Washington, D.C. 20002
- U.S. National Resources Conservation Service:**
Natural Resources Conservation Service
Parkdale Center, Suite 250
601 Business Loop 10th
Columbia, MO 65203-2546
- National Geologic Service:**
National Geologic Survey
Edward J. Mackay, Chief
Spatial Reference System Division
NOAA NNGS2
1315 E-W Highway
Silver Spring, MD 20910-3282
- State Historic Preservation Office:**
Not Applicable.
- Other Agencies Consulted:**
City Manager
City of Bonne Terre
1 North Wood Street, Apt. A
Bonne Terre, MO 63628-1367

Dated this 10th day of November, 2000.

Charles W. Soyars
Charles W. Soyars

EXHIBIT B

14493 SERVICE DATE - DECEMBER 31, 2000

DO

FR-4915-00-P

DEPARTMENT OF TRANSPORTATION

Surface Transportation Board

STB Docket No. AB-33 (Sub-No. 64SN)

Union Pacific Railroad Company--Abandonment Exemption in Bonne Terre, MO

Union Pacific (UP) has filed a notice of exemption under 49 CFR 115.

Subpart F--Exempt Abandonments and Discontinuances to abandon a 1.18-mile line of railroad between milepost 31.20 and milepost 30.10 (the Bonne Terre Industrial Lead) in Bonne Terre, St. Francois County, MO. The line traverses United States Postal Service Zip Code 63628.

UP has certified that: (1) no local traffic has moved over the line for at least 2 years; (2) there is no overhead traffic on the line; (3) no formal complaints filed by a user of rail service on the line (or by a state or local government entity acting on behalf of such user) regarding cessation of service over the line either is pending with the Surface Transportation Board (Board) or with any U.S. District Court or has been decided in favor of complainant within the 2-year period; and (4) the requirements at 49 CFR 1105.7 (environmental reports), 49 CFR 1105.8 (historic reports), 49 CFR 1105.11 (transmittal letter), 49 CFR 1105.12 (newspaper publication), and 49 CFR 1152.50(d)(1) (notice to governmental agencies) have been met.

As a condition to this exemption, any employer adversely affected by the abandonment shall be protected under Onion Short Line R. Co.--Abandonment--Order.

STB Docket No. AB-33 (Sub-No. 164X)

360 I.C.C. 91 (1979). To address whether this condition adequately protects affected employees, a petition for partial revocation under 49 U.S.C. 10502(d) must be filed. Provided no formal expression of intent to file an offer of financial assistance (OFA) has been received, this exemption will be effective on January 30, 2001, unless stayed pending reconsideration. Petitions to stay that do not involve environmental issues,¹ formal expressions of intent to file an OFA under 49 CFR 1152.27(e)(2),² and trail use/rail banking requests under 49 CFR 1152.29 must be filed by January 2, 2001.

Petitions to reopen or requests for public use conditions under 49 CFR 1152.28 must be filed by January 10, 2001, with: Surface Transportation Board, Office of Secretary, Case Control Unit, 1925 K Street, N.W., Washington, DC 20423.

A copy of any petition filed with the Board should be sent to applicant's representative: James P. Galin, Union Pacific Railroad Company, 1716 Dodge Street, Room 810, Omaha, NE 68179.

If the verified notice contains false or misleading information, the exemption is void ab initio.

UP has filed an environmental report which addresses the abandonment's effects.

¹ The Board will grant a stay if an informed decision on environmental issues (whether raised by a party or by the Board's Section of Environmental Analysis in its independent investigation) cannot be made before the exemption's effective date. See *Exemption of Union Pacific Railroad Company*, 100 I.C.C. 203 (1989). Any request for a stay should be filed as soon as possible so that the Board may take appropriate action before the exemption's effective date.

² Each offer of financial assistance must be accompanied by the filing fee, which currently is set at \$1000. See 49 CFR 1002.21(f)(25).

STB Docket No. AB-11 (Sub-No. 164X)

If any, on the environment and historic resources. The Section of Environmental Analysis (SEA) will issue an environmental assessment (EA) by December 26, 2000. Interested persons may obtain a copy of the EA by writing to SEA (Room 500, Surface Transportation Board, Washington, DC 20423) or by calling SEA, at (202) 565-1545. Comments on environmental and historic preservation matters must be filed within 15 days after the EA becomes available to the public.

Environmental, historic preservation, public use, or trail use/rail banking conditions will be imposed, where appropriate, in a subsequent decision.

Pursuant to the provisions of 49 CFR 1152.29(e)(2), UP shall file a notice of consummation with the Board to signify that it has exercised the authority granted and fully abandoned the line. If consummation has not been effected by UP's filing of a notice of consummation by December 21, 2001, and there are no legal or regulatory barriers to consummation, the authority will automatically expire.

Board decisions and notices are available on our website at "WWW.STB.DOT.GOV."

Decided: December 8, 2000.

By the Board, David M. Kofschalk, Director, Office of Proceedings.



Vernon A. Williams

Secretary

SERVICE LIST FOR: 11-dec-2000 5TH NR 11 164 X CHICK PACIFIC RAILROAD COMPANY... ASA

U. S. ARMY CORPS OF ENGINEERS
1223 SPOURCE ST
SAINT LOUIS MO 63103-2811 US

OFFICE OF THE GOVERNOR
STATE CAPITOL BLDG
JEFFERSON CITY MO 65201-1556 US

DEPARTMENT OF NATURAL RESOURCES
PO BOX 176
JEFFERSON CITY MO 65202-0176 US

DIVISION OF RAILROADS
RMT & TFM DEPT
PO BOX 270
JEFFERSON CITY MO 65202-0270 US

U. S. FISH & WILDLIFE
608 CHERRY ST 5TH 213
COLUMBIA MO 65201-7712 US

JAMES P GATLIN
UNION PACIFIC RAILROAD COMPANY
1416 CORCOR STREET ROOM 810
OSAMA NE 68179-0810 US

U. S. ARMY CORPS OF ENGINEERS
KANSAS CITY DISTRICT
705 FEDERAL BLDG
KANSAS MO 64106-1896 US

FEDERAL ASSISTANCE CLEARINGHOUSE
CITY OF GENERAL SERVICES
PO BOX 859
ROOM 740 TRUMAN BUILDING
JEFFERSON CITY MO 65102 US

CHIEF, ENGINEER
MO HWY AGC TRANSP. DEPT.
PO BOX 170
JEFFERSON CITY MO 65102-0170 US

MISSOURI PUBLIC SERVICE COMMISSION
DIRECTOR/TRAFFIC DIV
PO BOX 160
TRUMAN STATE OFFICE BUILDING
JEFFERSON CITY MO 65102-0160 US

ENVIRONMENTAL PROTECTION AGENCY
REGION VII
301 S 7TH ST
KANSAS CITY MO 64101-2907 US

Records: 11

EXHIBIT C

201369

UNION PACIFIC RAILROAD COMPANY

Law Department

1916 2000E STREET
ROOM 600
OWENS, MISSOURI 64779-0007
TEL: 420-371-0270



James P. Griffin
General Attorney
(407) 271-2158
(407) 271-7107 (FAX)

ENTERED
Office of the Secretary

JAN 24 2001

Part of
Public Record

January 23, 2001



D

VIA FACSIMILE TRANSMISSION: 202-565-9002

Vernon A. Williams, Secretary
Surface Transportation Board
1925 "K" Street, N.W.
Washington, D.C. 20423-0001

RE: STB Docket No. AB-33 (Sub-No. 164X), Union Pacific Railroad
Company - Abandonment Exemption - In St. Francois County,
Missouri (Bonne Terre Industrial Lead)

NOTICE OF CONSUMMATION

Dear Mr. Williams:

On December 21, 2000, the Board served its Notice in the above-referenced case, authorizing an exempt abandonment of a 1.10 mile line of railroad between Milepost 31.20 and Milepost 30.10 (the Bonne Terre Industrial Lead) in Bonne Terre, St. Francois County, Missouri. The exemption was effective January 20, 2001. On December 28, 2000, the Board served an Environmental Assessment in this matter. No environmental conditions were recommended.

Therefore, please be advised that Union Pacific Railroad Company, as of January 21, 2001, has exercised the abandonment exemption authorized in this case and has ceased any and all operations on this line. This Notice is provided in compliance with 49 C.F.R. § 1152.29(e)(2).

JUN 23 10:15:47 PM

7187 TO 91202523006 P.10/10

Ten (10) additional copies of this letter are also enclosed for the Board's use and distribution.

Sincerely yours,



James P. Galin
General Attorney
(402) 271-2158
(402) 271-7107 (FAX)

JPG/mis
Attachment

EXHIBIT D

31641
DO

SERVICE DATE - FEBRUARY 12, 2001

SURFACE TRANSPORTATION BOARD

DECISION

STD Docket No. AB-33 (Sub-No. 164X)

UNION PACIFIC RAILROAD COMPANY--ABANDONMENT
EXEMPTION--IN DONNE TERRE, MO

Decided: February 5, 2001

In the above-entitled proceeding, no environmental or historic preservation issues have been raised by any party or identified by the Section of Environmental Analysis. Accordingly, a Finding of No Significant Impact under 49 CFR 1105.10(g) will be made pursuant to 49 CFR 1011.8(c)(10).

It is ordered:

1. Abandonment of the involved rail line will have no significant effect on the quality of the human environment and conservation of energy resources or on historic resources.
2. This decision is effective on its service date.

By the Board, David M. Kuschmk, Director, Office of Proceedings.

Vernon A. Williams
Secretary

SERVICE LIST FOR: 56-Feb-2001 SITE AS 13 164 X UNION PACIFIC RAILROAD COMPANY... ADA

U. S. ARMY CORPS OF ENGINEERS
1322 SPRUCE ST
SAINT LOUIS MO 63101-2833 US

U. S. ARMY CORPS OF ENGINEERS
KANSAS CITY DISTRICT
708 FEDERAL BLDG
KANSAS MO 64108-1898 US

OFFICE OF THE GOVERNOR
STATE CAPITOL BLDG
JEFFERSON CITY MO 65101-1596 US

FEDERAL ASSISTANCE CLEARINGHOUSE
DIV. OF GENERAL SERVICES
PO BOX 809
ROOM 740 TRUMAN BUILDING
JEFFERSON CITY MO 65102 US

DEPARTMENT OF NATURAL RESOURCES
PO BOX 176
JEFFERSON CITY MO 65102-0176 US

CHIEF, ENGINEER
MO HWY AND TRANSP. DEPT.
PO BOX 329
JEFFERSON CITY MO 65102-0270 US

DIVISION OF RAILROADS
HWY & TRNSP DEPT
PO BOX 329
JEFFERSON CITY MO 65102-0270 US

MIDWEST PUBLIC SERVICE COMMS
DIRECTOR/TRACKS DIV.
PO BOX 369
TRUMAN STATE OFFICE BUILDING
JEFFERSON CITY MO 65102-1216 US

U. S. FISH & WILDLIFE
608 CHERRY ST STE 312
COLUMBIA MO 65201-7712 US

ENVIRONMENTAL PROTECTION AGENCY
REGION VII
901 N 5TH ST
KANSAS CITY MO 64101-2907 US

CHARLES BAYLORG
UNION PACIFIC RAILROAD COMPANY
1416 DODGE STREET
OMAHA NE 68179 US

JAMES R GATLIN
UNION PACIFIC RAILROAD COMPANY
1814 DOUGLASS STREET ROOM 830
OMAHA NE 68179-0830 US

Records: 12

EXHIBIT E

**SURFACE TRANSPORTATION BOARD
OFFICE OF ECONOMICS, ENVIRONMENTAL ANALYSIS,
AND ADMINISTRATION**

MEMORANDUM

12/21/00

Ann Newman, Environmental Coordinator
Office of Proceedings

Blaine K. Kaiser, Chief
Section of Environmental Analysis

SUBJECT: AB-33 (Sub No. 164X) - Union Pacific Railroad Company - Abandonment
of a Branch Line - in St. Francois County, Missouri (Bonnie Terre Industrial Lead in Bonne Terre,
Missouri)

RECOMMENDATION: No Conditions.

The attached environmental assessment prepared for this proceeding concludes that the
proposed abandonment will not significantly affect the quality of the human environment.
Therefore, the environmental impact statement process is unnecessary.

SEA Contact: Rini Ghosh (x 1539)
Attachment

cc: Secretary's Office (1 copy)
Service (2 copies EA only)
SEA Chron

ENVIRONMENTAL DOCUMENT

31500

**SURFACE TRANSPORTATION BOARD
WASHINGTON, DC 20423**

ENVIRONMENTAL ASSESSMENT

DOCKET NO. AB-33 (Sub. No. 164X)

**Union Pacific Railroad Company - Abandonment Exemption - In St. Francois County,
Missouri (Donne Terre Industrial Lead In Boone Terre, Missouri)**

BACKGROUND

In this proceeding, the Union Pacific Railroad Company (UP) has filed a notice of exemption under 49 CFR 1152.50 seeking exemption from the requirements of 49 U.S.C. 10903 in connection with the abandonment of a line of railroad from milepost 31.20 to milepost 30.10, a distance of 1.10 miles, over the Boone Terre Industrial Lead in Boone Terre, St. Francois County, Missouri. A map depicting the rail line in relationship to the area served is appended to the report. If the notice becomes effective, the railroad will be able to salvage track, ties and other railroad appurtenances and to dispose of the right-of-way.

DESCRIPTION OF THE LINE

According to UP, there has been no local traffic on the line for at least 2 years and UP states that it is unlikely that there will be any prospect for increased traffic. UP describes the area surrounding the line as light industrial. UP indicates that the right-of-way will likely not be suitable for other public purposes.

ENVIRONMENTAL REVIEW

UP submitted an environmental report that concludes the quality of the human environment will not be affected significantly as a result of the abandonment or any post-abandonment activities, including salvage and disposition of the right-of-way. UP served the environmental and historical reports on a number of appropriate Federal, state, and local agencies as required by the Surface Transportation Board's environmental rules (49 CFR 1105.7(b)). We have reviewed and investigated the record in this proceeding.

CONDITIONS

We recommend that no environmental conditions be placed on any decision granting abandonment authority.

CONCLUSIONS

Based on the information provided from all sources to date, we conclude that, as currently proposed, abandonment of the line will not significantly affect the quality of the human environment. Therefore, the environmental impact statement process is unnecessary.

Alternatives to the proposed abandonment would include denial (and, therefore, no change in operations), discontinuance of service without abandonment and continued operation by another operator. In any of these cases, the existing quality of the human environment and energy consumption should not be affected.

PUBLIC USE

If abandonment and salvage of the rail line does take place, the right-of-way may be suitable for other public use. A request containing the requisite four-part showing for imposition of a public use condition (49 CFR 1152.28) must be filed with the Surface Transportation Board and served on the railroad within the time specified in the Federal Register notice.

TRAIL USE

A request for a notice of interim trail use (NITU) is due to the Surface Transportation Board, with a copy to the railroad, within 10 days of publication of the notice of exemption in the Federal Register. However, the Board will accept late-filed requests as long as it retains jurisdiction to do so. This request must comply with the Board's rules for use of rights-of-way as trails (49 CFR 1152.29).

PUBLIC ASSISTANCE

The Board's Office of Public Services (OPS) responds to questions regarding interim trail use, public use, and other reuse alternatives. You may contact OPS directly at (202) 565-1392 or mail inquiries to the Surface Transportation Board, Office of Public Services, Washington, DC 20423.

ENVIRONMENTAL COMMENTS

If you wish to file comments regarding this environmental assessment, send an original and two copies to Vernon A. Williams, Office of the Secretary, Washington, DC 20423, to the attention of Rini Ghosh, who prepared this environmental assessment. Please refer to Docket No. AU-33 (Sub No. 1648) in all correspondence addressed to the Board. Questions regarding this environmental assessment should be referred to Rini Ghosh at (202) 565-1539.

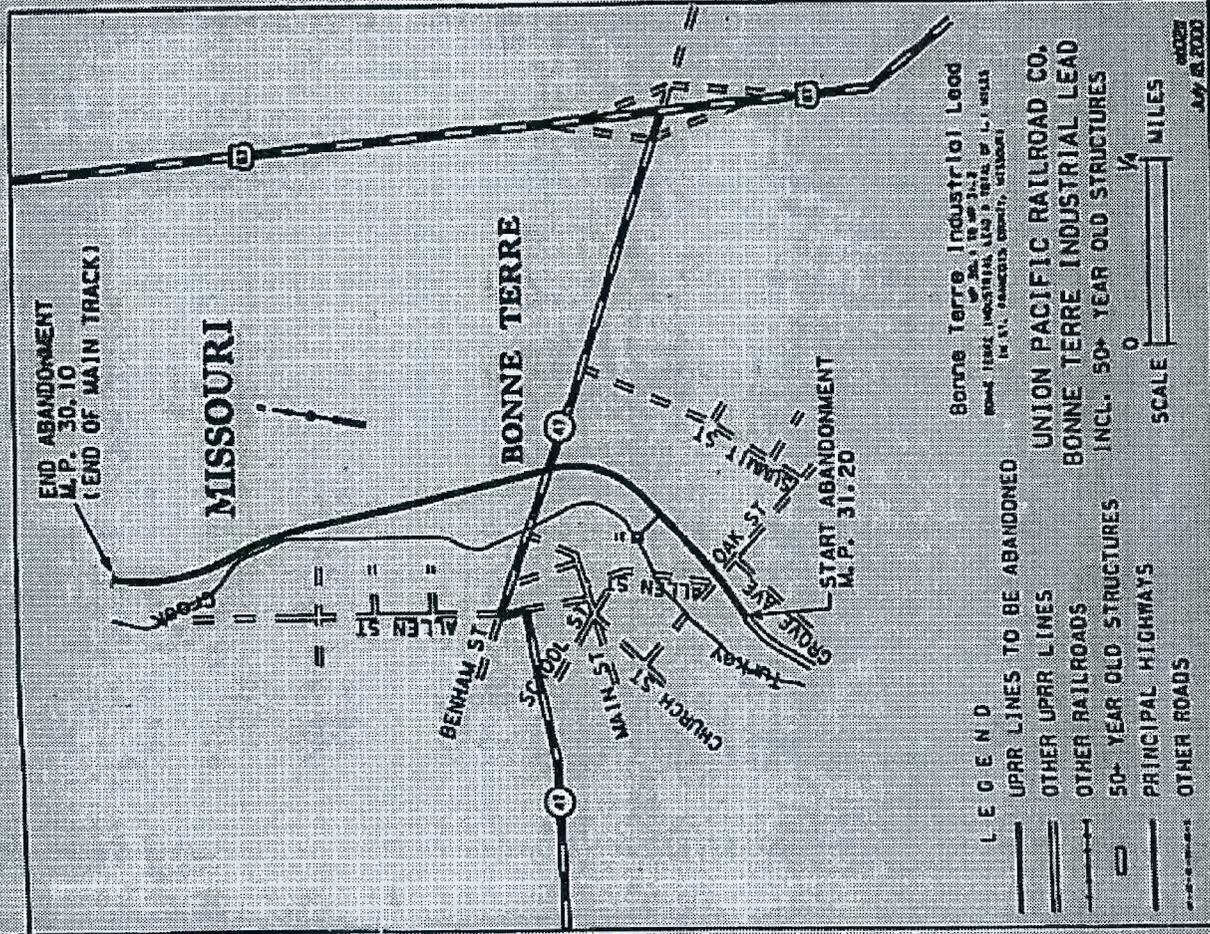
Date made available to the public: December 26, 2000.

Comment due date: January 10, 2001 (15 days).

By the Surface Transportation Board, Elaine K. Kaiser, Chief, Section of Environmental
Analysis.

Vernon A. Williams
Secretary

Attachment



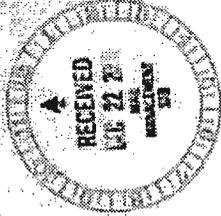


UNION PACIFIC RAILROAD COMPANY



CHARLES W. SAYLORS
DIRECTOR LEGAL SUPPORT SERVICES

LEGAL SERVICE CENTER
CHICAGO, ILLINOIS 60606
(402) 271-1887



ENTERED
Office of the Secretary

DEC 26 2000

Part of
Public Record

December 18, 2000

Surface Transportation Board
Section of Environmental Analysis
1025 K Street, N.W., Room 504
Washington, DC 20423-0001

Attention: Elaine Kaiser

RE: Cocket No. AB-33 (Sub-No. 164X), Union Pacific Railroad Company -
Abandonment Exemption - in Bonne Terre, Missouri

Dear Ms. Kaiser:

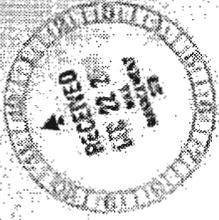
Enclosed is a copy of a letter dated December 18, 2000, sent to the State
Historical Preservation Office in the State of Missouri transmitting the Combined Environmental
and Historic Report and the Notice of Exemption in the above-referenced case.

Sincerely yours,

Charles W. Saylor
Charles W. Saylor
(402) 271-4881
(402) 271-5125 (FAX)

Enclosure

ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED



December 18, 2000

Deputy State Historic Preservation Officer
Historic Preservation Program
P. O. Box 170
Jefferson City, MO 65102
Attention: Cairo Blackwell

RE: Docket No. AB-33 (Sub-No. 164X), Union Pacific Railroad Company -
Abandonment Exemption - In Bonna Terra, Missouri

Enclosed is a copy of the Combined Environmental and Historic Report and the
Notice of Exemption in the above-referenced case. As you will note, no railroad structures that
are 50 years old or older are part of the proposed abandonment. If you have any questions,
please call.

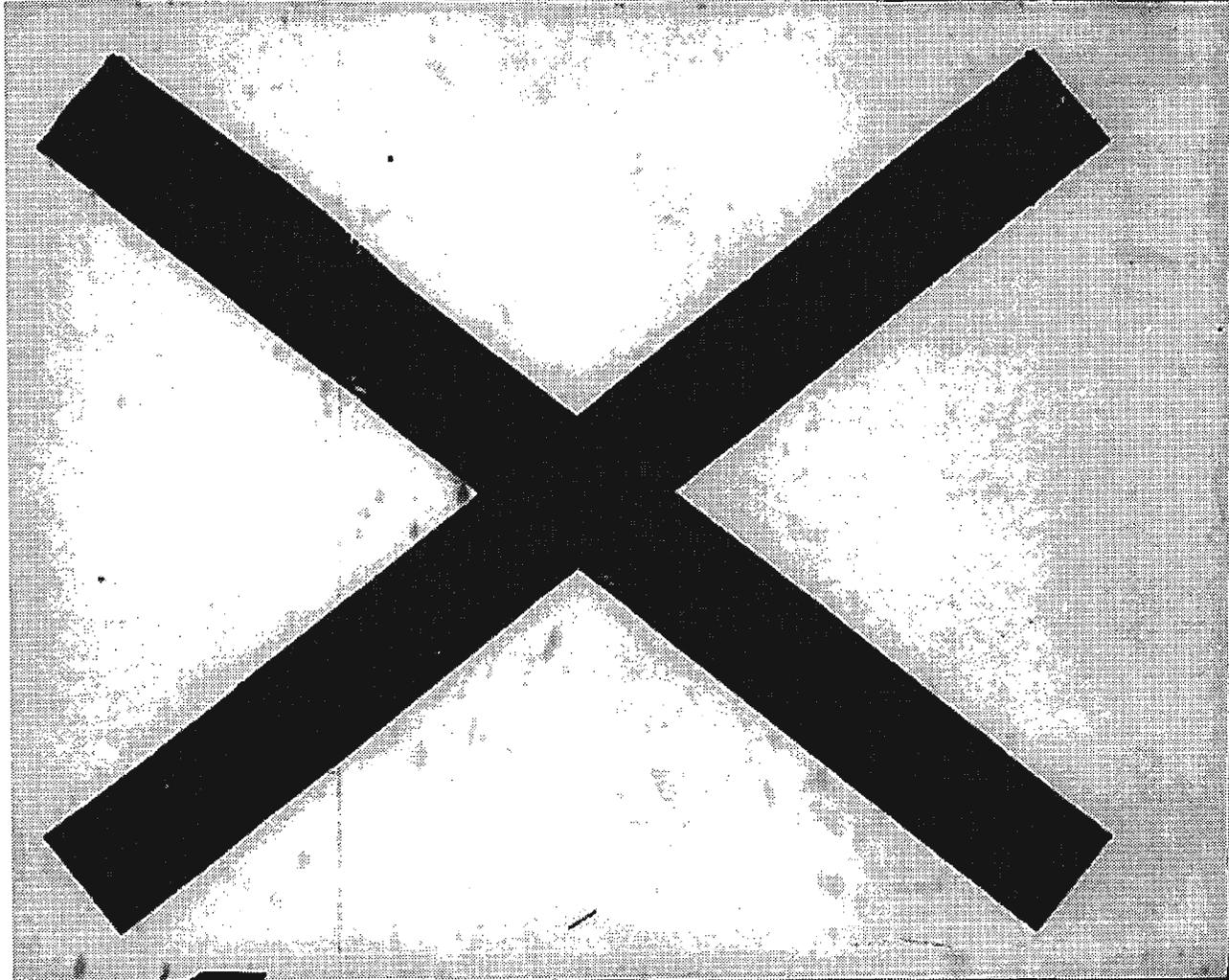
Sincerely yours,

Charles W. Saylor

Charles W. Saylor
(402) 271-4861
(402) 271-5125 (FAX)

Enclosures

U.S. GOVERNMENT PRINTING OFFICE: 2000



31500

SERVICE DATE - DECEMBER 26, 2000

SURFACE TRANSPORTATION BOARD
WASHINGTON, DC 20423

ENVIRONMENTAL ASSESSMENT

DOCKET NO. AB-33 (Sub. No. 164X)

Union Pacific Railroad Company - Abandonment Exemption - In St. Francois County,
Missouri (Bonne Terre Industrial Lead in Bonne Terre, Missouri)

BACKGROUND

In this proceeding, the Union Pacific Railroad Company (UP) has filed a notice of exemption under 49 CFR 1152.50 seeking exemption from the requirements of 40 U.S.C. 10903 in connection with the abandonment of a line of railroad from milepost 31.20 to milepost 30.10, a distance of 1.10 miles, over the Bonne Terre Industrial Lead in Bonne Terre, St. Francois County, Missouri. A map depicting the rail line in relationship to the area served is appended to the report. If the notice becomes effective, the railroad will be able to salvage track, ties and other railroad appurtenances and to dispose of the right-of-way.

DESCRIPTION OF THE LINE

According to UP, there has been no local traffic on the line for at least 2 years and UP states that it is unlikely that there will be any prospect for increased traffic. UP describes the area surrounding the line as light industrial. UP indicates that the right-of-way will likely not be suitable for other public purposes.

ENVIRONMENTAL REVIEW

UP submitted an environmental report that concludes the quality of the human environment will not be affected significantly as a result of the abandonment or any post-abandonment activities, including salvage and disposition of the right-of-way. UP served the environmental and historical reports on a number of appropriate Federal, state, and local agencies as required by the Surface Transportation Board's environmental rules [49 CFR 1105.7(b)]. We have reviewed and investigated the record in this proceeding.

CONDITIONS

We recommend that no environmental conditions be placed on any decision granting abandonment authority.

CONCLUSIONS

Based on the information provided from all sources to date, we conclude that, as currently proposed, abandonment of the line will not significantly affect the quality of the human environment. Therefore, the environmental impact statement process is unnecessary.

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TRAILS USE

A request for a notice of interim trail use (NITU) is due to the Surface Transportation Board, with a copy to the railroad, within 10 days of publication of the notice of exemption in the Federal Register. However, the Board will accept late-filed requests as long as it retains jurisdiction to do so. This request must comply with the Board's rules for use of rights-of-way as trails (49 CFR 1152.29).

PUBLIC ASSISTANCE

The Board's Office of Public Services (OPS) responds to questions regarding interim trail use, public use, and other reuse alternatives. You may contact OPS directly at (202) 565-1592 or mail inquiries to the Surface Transportation Board, Office of Public Services, Washington, DC 20423.

ENVIRONMENTAL COMMENTS

If you wish to file comments regarding this environmental assessment, send an original and two copies to Vernon A. Williams, Office of the Secretary, Washington, DC 20423, to the attention of Rini Ghosh, who prepared this environmental assessment. Please refer to Docket No. AD-33 (Sub No. 164X) in all correspondence addressed to the Board. Questions regarding this environmental assessment should be referred to Rini Ghosh at (202) 565-1539.

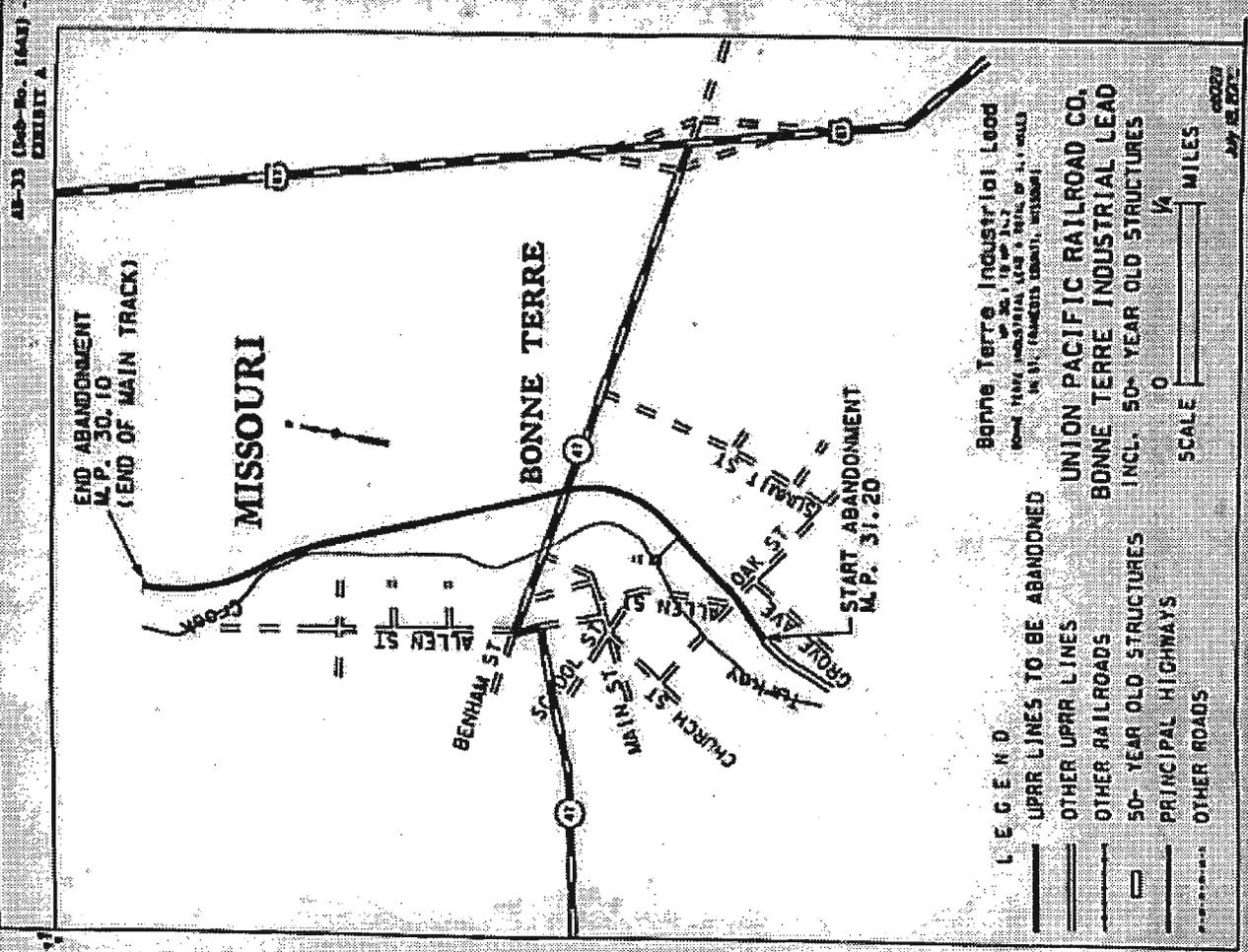
Date made available to the public: December 26, 2000.

Comment due date: January 10, 2001 (15 days).

By the Surface Transportation Board
Verion A. Williams
Verion A. Williams
Secretary

Attachment

ID 31500



SERVICE LIST FOR: 21-dec-2000 DTB AD 33 164 X UNION PACIFIC RAILROAD COMPANY-- ASA

U. S. ARMY CORPS OF ENGINEERS
1322 SPRUCE ST
SAINT LOUIS MO 63103-2833 US

OFFICE OF THE GOVERNOR
STATE CAPITOL BLDG
JEFFERSON CITY MO 65101-1556 US

DEPARTMENT OF NATURAL RESOURCES
PO BOX 176
JEFFERSON CITY MO 65102-0176 US

DIVISION OF RAILROADS
Hwy & Trns DEPT
PO BOX 376
JEFFERSON CITY MO 65102-0370 US

U. S. FISH & WILDLIFE
408 CHERRY ST STE 212
COLUMBIA MO 65201-7712 US

JAMES P. GATLIN
UNION PACIFIC RAILROAD COMPANY
1416 DODGE STREET ROOM 830
CHAMPA ILL 68179-0830 US

U. S. ARMY CORPS OF ENGINEERS
KANSAS CITY DISTRICT
703 FEDERAL BLDG
KANSAS MO 64106-3896 US

FEDERAL ASSISTANCE CLEARINGHOUSE
DIV. OF GENERAL SERVICES
PO BOX 809
ROOM 760 TRUMAN BUILDING
JEFFERSON CITY MO 65102 US

CHIEF, ENGINEER
MO RRT AND TRANSP. DEPT.
PO BOX 376
JEFFERSON CITY MO 65102-0370 US

MISSOURI PUBLIC SERVICE COMMISSION
DIRECTOR/TRANSP DIV
PO BOX 360
TRUMAN STATE OFFICE BUILDING
JEFFERSON CITY MO 65102-1216 US

ENVIRONMENTAL PROTECTION AGENCY
REGION VII
301 N 5TH ST
KANSAS CITY MO 65101-3907 US

Records: 11



201172

UNION PACIFIC RAILROAD COMPANY

1001 G STREET, S.W.
WASHINGTON, D.C. 20004-4400
FAX (402) 271-3158



December 22, 2000

Law Offices of
James P. Galt, Esq.
General Attorney
(402) 271-3158
(402) 271-7107 (FAX)

Surface Transportation Board
Section of Environmental Analysis
1925 "K" Street, N.W., Room 504
Washington, DC 20323-0001

Attention: Elaine Kaiser

RE: Docket No. AB-33 (Sub-No. 194X), Union Pacific Railroad Company -
Abandonment Exemption - In Boone Terre, Missouri

Dear Ms. Kaiser:

Enclosed is a letter dated December 4, 2000, from the Missouri Commission
indicating that review by various state agencies has been completed, and that none of the
agencies had any comments or recommendations at this time regarding the above-referenced
abandonment.

Ten (10) additional copies are enclosed for the Board's use and distribution.

Sincerely yours,

James P. Galt
James P. Galt
General Attorney
(402) 271-3158
(402) 271-7107 (FAX)

JPG:ms
Enclosures

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Office of the Secretary

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Public Record

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Roger D. Wilson
Governor

LAW DEPT
DEC - 8 2000

REC'D UPFR
Evan Parnick
Director
Division of General Services

State of Missouri
OFFICE OF ADMINISTRATION
Post Office Box 809
Jefferson City
65102

December 4, 2000



James Gartin
General Attorney
Union Pacific Railroad Company
1416 Dodge Street, Room 830
Omaha, NE 68179

Dear Mr. Gartin:

Subject: 0011037 - Union Pacific Railroad Company
Abandonment Exemption--St. Francois County, MO (Bonnie Terre
Industrial Land in Bonne Terre, MO) Combined Environmental and
Historic Report [Docket No. AB-33(Sub-No. 64X)]

The Missouri Federal Assistance Clearinghouse, in cooperation with state and local agencies interested or possibly affected, has completed the review on the above project application. None of the agencies involved in the review had comments or recommendations to offer at this time. This concludes the Clearinghouse's review.

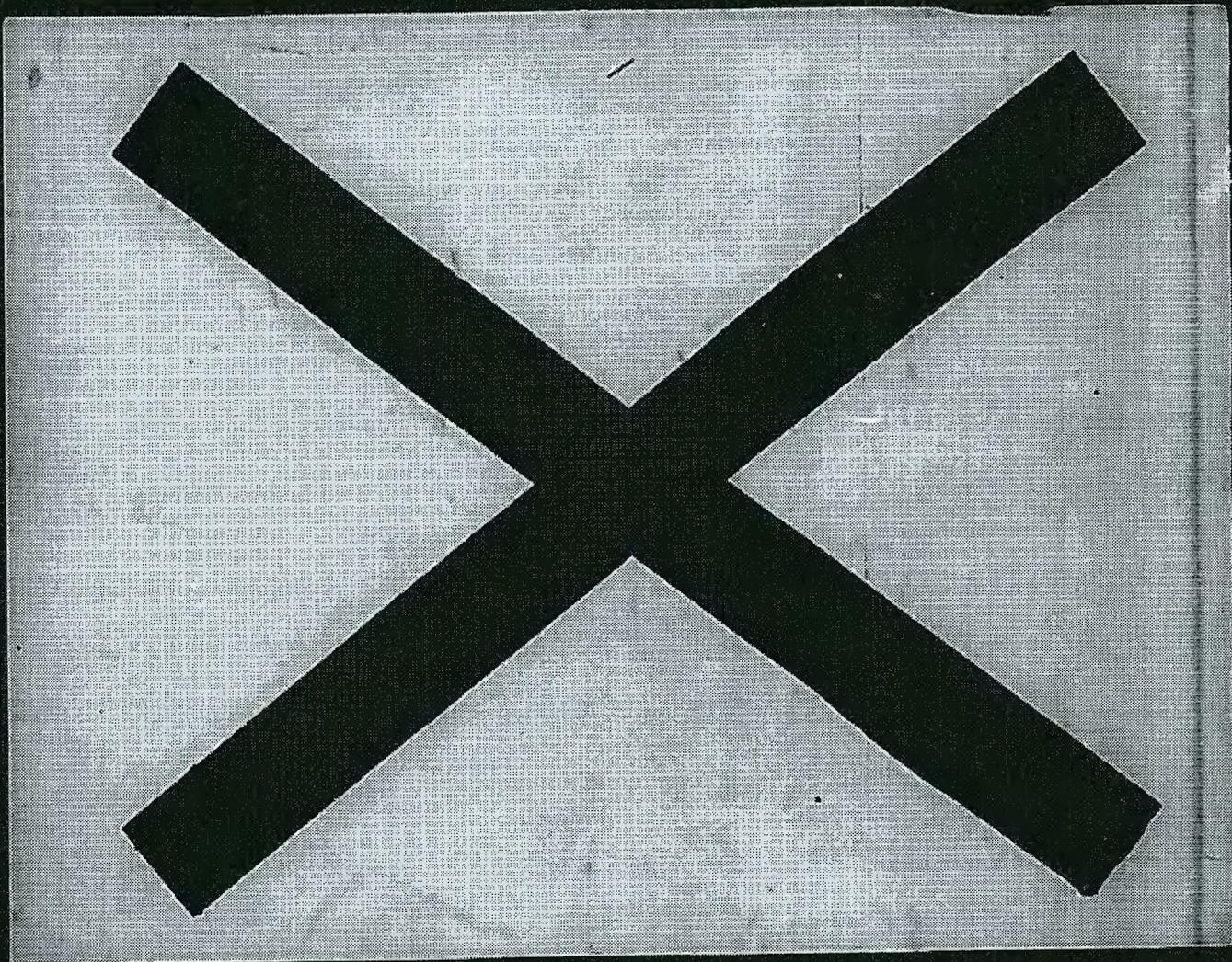
A copy of this letter is to be attached to the application as evidence of compliance with the State Clearinghouse requirements.

Sincerely,

John P. Em
John P. Em
Louis Pohl, Coordinator
Missouri Clearinghouse

LP:em

cc: Southeast Missouri Regional Planning Commission



EMULSION SURFACE TRANSPORTATION BOARD
OFFICE OF ECONOMICS, ENVIRONMENTAL ANALYSIS,
AND ADMINISTRATION

MEMORANDUM

January (2, 2001)

TO : Ann Newman, Director's Office
Office of Proceedings

FROM : Elaine K. Kaiser, Chief *Elaine Kaiser*
Section of Environmental Analysis

SUBJECT: POST ENVIRONMENTAL ASSESSMENT RECOMMENDATIONS IN
DOCKET NO. AB-33 (SUB-NO. 164 X)

ABANDONMENT TYPE

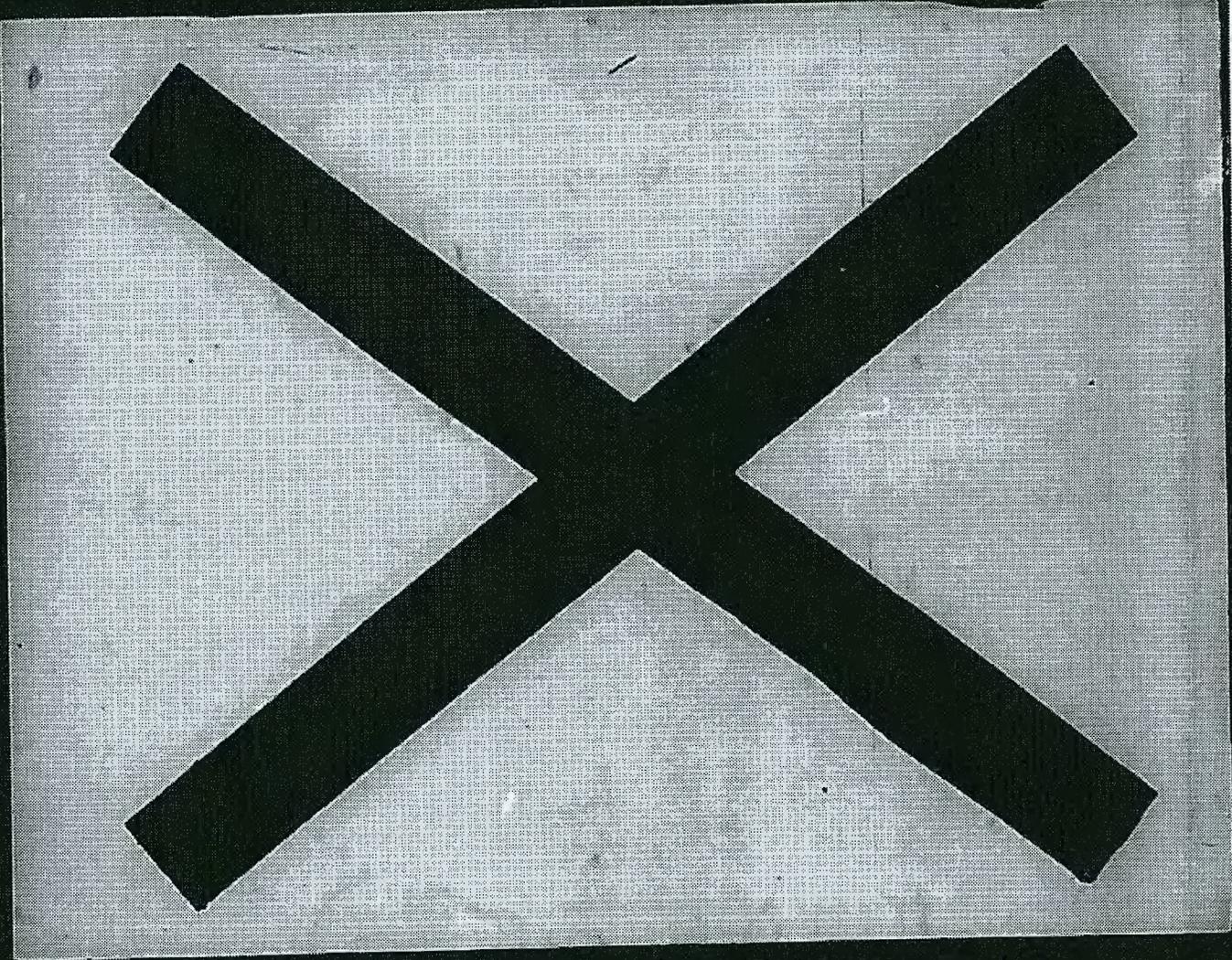
The time for comments on the Environmental Assessment (EA) has expired in that:
(X) Notice of Exemption () Petition For Exemption () Regulated Abandonment

- (X) **NO COMMENTS TO THE EA RECEIVED**
(X) The following recommendations in the EA are unchanged:
() Historic () Fish & Wildlife () Corps of Engineers (X) No Conditions
() Other:
() Independent consultation requires the following new or changed conditions:
() Historic () Fish & Wildlife () Corps of Engineers () No Conditions
()
(SEE 1. and 2. below for specific changes.)

- () **COMMENTS TO THE EA RECEIVED**
() Based on the comments, the following conditions should remain the same:
() Historic () Fish & Wildlife () Corps of Engineers () No conditions
() Other:
() Based on the comments, we recommend the following new conditions or changed conditions:
() Historic () Fish & Wildlife () Corps of Engineers () No conditions
() Other:
(SEE 1. and 2. below for specific changes.)

1. PREVIOUSLY RECOMMENDED CONDITIONS SHOULD BE CHANGED TO READ AS FOLLOWS:
2. THE FOLLOWING NEW CONDITIONS ARE RECOMMENDED:

SEA Contact & Tel. No.: Rita Ghosh (X 1639)
cc: Secretary's Office (1 copy)
SEA Chron



30717
SEA

SERVICE DATE - JANUARY 7, 2000

SURFACE TRANSPORTATION BOARD

Docket No. AB-33 (Sub-No. 70)

UNION PACIFIC RAILROAD COMPANY—ABANDONMENT—WALLACE BRANCH, ID

Decided: January 3, 2000

ACTION: Notice of Availability of a Draft Supplemental Environmental Assessment and Request for Comments.

SUMMARY: The Surface Transportation Board's (Board's) Section of Environmental Analysis (SEA) has prepared, and now asks for public review and comment on, a Draft Supplemental Environmental Assessment (Draft Supplemental EA) to complete the environmental review process under the National Environmental Policy Act (NEPA) for this rail abandonment proceeding.

DATES: Written comments on the Draft Supplemental EA are due February 22, 2000 (45 days).

ADDRESSES: Send an original and 10 copies to Vernon A. Williams, Office of the Secretary, Room 711, Surface Transportation Board, 1925 K Street, NW, Washington, D.C. 20423-0001, to the attention of Phillis Johnson-Ball. Please refer to Docket No. AB-33 (Sub-No. 70) in all correspondence addressed to the Board.

FOR FURTHER INFORMATION CONTACT: Phillis Johnson-Ball, (202) 565-1530 (TDD for the hearing impaired) (202) 565-1095). Additional information is contained in the Draft Supplemental EA. To obtain a copy of the Draft Supplemental EA, contact D.C. News & Data, 1925 K Street, NW, Washington, D.C. 20423, phone (202) 289-4357 or visit the Board's website at WWW.STB.DOT.GOV.

SUPPLEMENTARY INFORMATION: This Draft Supplemental EA addresses the Union Pacific Railroad Company's (UP's) filings with the Board on June 18, 1999 and October 19, 1999, of environmental information required to complete the environmental review process in this rail abandonment proceeding in accordance with the Court's decision in State of Idaho v.

ICC, 35 F.3d 545 (D.C. Cir. 1994). UP now seeks final approval to salvage (i.e., remove the tracks, ties, and roadbed) the rail lines known as the Wallace-Idaho Branch (Wallace Branch) in Benewah, Kootenai and Shoshone Counties, Idaho outside of the Bunker Hill Superfund Site (BHSS).¹

To meet its obligations under NEPA, SEA has completed its independent review of the material submitted by UP and has prepared this Draft Supplemental EA to address UP's environmental information and evaluate (1) whether the six environmental conditions previously imposed by the Interstate Commerce Commission (ICC) are met and (2) whether the environmental concerns regarding salvage activity raised during the course of the environmental review process have now been appropriately addressed and resolved. The document also contains SEA's preliminary recommendations for mitigating the potential environmental impacts from salvage activity that have been identified.

Based on SEA's independent evaluation of all the available information, SEA preliminarily concludes that the material provided by UP is sufficient to satisfy five of the six environmental conditions imposed by the ICC to ensure that, prior to salvage of the line, the potential significance of environmental effects related to the proposed track salvage will have been properly evaluated.² Furthermore, SEA concludes, based on the available information and the input of other agencies and government entities with specialized expertise, that if UP complies with the mitigation in the Engineering Evaluation/Construct Analysis and the Track Salvage Work Plan that were issued and

¹ The 71.5-mile line extends from milepost 16.5 near Plummer, to milepost 88.4, near Wallace, and then to milepost 7.6, near Mallin, in Benewah, Kootenai, and Shoshone Counties, Idaho. The line traverses the U.S. Postal Service zip codes 83851, 83861, 83833, 83810, 83819, 83837, 83846, and 83846. The Wallace Branch no longer has stations because rail service has already been discontinued. The 7.9-mile section of right-of-way within the BHSS was addressed in the BHSS Record of Decision (EPA 1992) and is not part of the salvage proposal before the Board. Section 121(e)(1), 42 U.S.C. 9261(e)(1), relieves railroads of the requirement to obtain Board approval to abandon the portions of rail lines within Superfund sites if they do so in connection with remediation actions carried out in compliance with the Comprehensive Environmental Response, Compensation and Liability Act.

² The ICC Termination Act of 1995 (ICGTA), which was enacted on December 29, 1995, and took effect on January 1, 1996, abolishes the ICC and establishes the Board to assume some regulatory functions involving rail transportation matters that the ICC had administered, including the functions involving the abandonment of rail service at issue here. The ICC's six environmental conditions required consultation and possible permitting and review by appropriate agencies with specialized expertise prior to any salvage activity on this line.

³ The only condition that has not yet been satisfied is the ICC's Environmental Condition No. 6, involving historic preservation. SEA recommends that the Board impose a modified historic preservation condition on any decision approving salvage to ensure completion of the historic review process.

approved by EPA, and the Biological Assessment prepared by UP and approved by the U.S. Fish and Wildlife Service, and if the additional mitigation SEA recommendations in this Draft Supplemental EA is imposed and implemented by UP, UP's proposal to salvage the Wallace Branch would not have significant adverse environmental impacts.

SEA encourages the general public and interested agencies, government entities, and parties to participate in the environmental review of UP's salvage proposal by commenting on this Draft Supplemental EA during the 45-day comment period which ends February 22, 2000. SEA seeks public input on all aspects of this Draft Supplemental EA, as well as on the Board's environmental review process, so that SEA can assess public concerns and issues related to the UP proposal and determine whether additional environmental analysis and mitigations are necessary to analyze and effectively mitigate the potential environmental impacts that could occur as a result of track salvage activity on this line.

SEA will fully consider all comments that it receives in preparing final environmental recommendations to the Board, which will be based on further documentation and analysis, if any is needed. The Board then will consider the entire environmental record, the Draft Supplemental EA, all public comments, and SEA's Post EA recommendations, including SEA's final recommended environmental mitigation before issuing a decision either granting or denying UP final authority to salvage the portion of the Wallace Branch outside of the BISS. In that decision, if UP's proposal is approved, the Board will impose any environmental conditions it deems appropriate.

By the Board, Elaine K. Kahney, *Elaine K. Kahney*
Director, Section of Environmental Analysis
Veronica Williams
Secretary

EXHIBIT F

November 04, 2013



RE: ASARCO 1924220A

WorkOrder: 13110053

Dear [REDACTED]:

TEKLAB, INC received 8 samples on 11/1/2013 5:00:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,



Marvin L. Darling
Project Manager
(618)344-1004 ex 41
mdarling@teklabinc.com



Definitions

<http://www.teklabinc.com/>

Client: [REDACTED]

Work Order: [REDACTED]

Client Project: ASARCO 1924220A

Report Date: 04-Nov-13

Abbr Definition

- CCV Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
- DF Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilutions factors.
- DNI Did not ignite
- DUP Laboratory duplicate is an aliquot of a sample taken from the same container under laboratory conditions for independent processing and analysis independently of the original aliquot.
- ICV Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
- IDPH IL Dept. of Public Health
- LCS Laboratory control sample, spiked with verified known amounts of analytes, is analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system. The acceptable recovery range is in the QC Package (provided upon request).
- LCSD Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
- MB Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
- MDL Method detection limit means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.
- MS Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
- MSD Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
- MW Molecular weight
- ND Not Detected at the Reporting Limit
- NELAP NELAP Accredited
- PQL Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions. The acceptable recovery range is listed in the QC Package (provided upon request).
- RL The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
- RPD Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
- SPK The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
- Surr Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
- TNTC Too numerous to count (> 200 CFU)

Qualifiers

- | | |
|--|--|
| # - Unknown hydrocarbon | B - Analyte detected in associated Method Blank |
| E - Value above quantitation range | H - Holding times exceeded |
| J - Analyte detected below quantitation limits | M - Manual Integration used to determine area response |
| ND - Not Detected at the Reporting Limit | R - RPD outside accepted recovery limits |
| S - Spike Recovery outside recovery limits | X - Value exceeds Maximum Contaminant Level |



Case Narrative

Client: [REDACTED]

Work Order: [REDACTED]

Client Project: ASARCO 1924220A

Report Date: 04-Nov-13

Cooler Receipt Temp: 12.6 °C

This report was revised on 11/4/13 per [REDACTED] request. The reason for the revision is to report Zinc on all samples. Please replace report dated 11/4/13 with this report. MLDII 11/4/13

Locations and Accreditations

	Collinsville	Springfield	Kansas City	Collinsville Air
Address	5445 Horseshoe Lake Road Collinsville, IL 62234-7425	3920 Pintail Dr Springfield, IL 62711-9415	8421 Nieman Road Lenexa, KS 66214	5445 Horseshoe Lake Road Collinsville, IL 62234-7425
Phone	(618) 344-1004	(217) 698-1004	(913) 541-1998	(618) 344-1004
Fax	(618) 344-1005	(217) 698-1005	(913) 541-1998	(618) 344-1005
Email	jhriley@teklabinc.com	KKlostermann@teklabinc.com	dthompson@teklabinc.com	EHurley@teklabinc.com

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2014	Collinsville
Kansas	KDHE	E-10374	NELAP	1/31/2014	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2014	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2014	Springfield
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2014	Collinsville
Arkansas	ADEQ	88-0966		3/14/2014	Collinsville
Illinois	IDPH	17584		5/31/2015	Collinsville
Kentucky	UST	0073		4/5/2014	Collinsville
Missouri	MDNR	00930		5/31/2015	Collinsville
Oklahoma	ODEQ	9978		8/31/2014	Collinsville



Laboratory Results

<http://www.teklabinc.com/>

Client: [REDACTED]

Work Order: [REDACTED]

Client Project: ASARCO 1924220A

Report Date: 04-Nov-13

Lab ID: 13110053-001

Client Sample ID: SB-1 (0-0.5 ft)

Matrix: SOLID

Collection Date: 11/01/2013 11:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 1312, 3005A, 6010B, METALS IN SPLP EXTRACT BY ICP								
Arsenic	NELAP	0.025		< 0.025	mg/L	1	11/04/2013 15:00	93336
Barium	NELAP	0.005		0.0136	mg/L	1	11/04/2013 15:00	93336
Cadmium	NELAP	0.002	J	0.0006	mg/L	1	11/04/2013 15:00	93336
Chromium	NELAP	0.01		< 0.01	mg/L	1	11/04/2013 15:00	93336
Lead	NELAP	0.04		0.0927	mg/L	1	11/04/2013 15:00	93336
Selenium	NELAP	0.05		< 0.05	mg/L	1	11/04/2013 15:00	93336
Silver	NELAP	0.01		< 0.01	mg/L	1	11/04/2013 15:00	93336
Zinc	NELAP	0.01		0.055	mg/L	1	11/04/2013 15:00	93336
SW-846 1312, 7470A IN SPLP EXTRACT								
Mercury	NELAP	0.0002		< 0.0002	mg/L	1	11/04/2013 12:09	93337



Laboratory Results

<http://www.teklabinc.com/>

Client: [REDACTED]

Work Order: [REDACTED]

Client Project: ASARCO 1924220A

Report Date: 04-Nov-13

Lab ID: 13110053-002

Client Sample ID: SB-1 (0.5-1 ft)

Matrix: SOLID

Collection Date: 11/01/2013 11:55

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 1312, 3005A, 6010B, METALS IN SPLP EXTRACT BY ICP								
Arsenic	NELAP	0.025		< 0.025	mg/L	1	11/04/2013 15:11	93336
Barium	NELAP	0.005		0.0089	mg/L	1	11/04/2013 15:11	93336
Cadmium	NELAP	0.002		< 0.002	mg/L	1	11/04/2013 15:11	93336
Chromium	NELAP	0.01		< 0.01	mg/L	1	11/04/2013 15:11	93336
Lead	NELAP	0.04	J	0.0069	mg/L	1	11/04/2013 15:11	93336
Selenium	NELAP	0.05		< 0.05	mg/L	1	11/04/2013 15:11	93336
Silver	NELAP	0.01		< 0.01	mg/L	1	11/04/2013 15:11	93336
Zinc	NELAP	0.01	J	0.0069	mg/L	1	11/04/2013 15:11	93336
SW-846 1312, 7470A IN SPLP EXTRACT								
Mercury	NELAP	0.0002		< 0.0002	mg/L	1	11/04/2013 12:11	93337



Laboratory Results

<http://www.teklabinc.com/>

Client: [REDACTED]

Work Order: [REDACTED]

Client Project: ASARCO 1924220A

Report Date: 04-Nov-13

Lab ID: 13110053-003

Client Sample ID: SB-2 (0-0.5 ft)

Matrix: SOLID

Collection Date: 11/01/2013 13:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 1312, 3005A, 6010B, METALS IN SPLP EXTRACT BY ICP								
Arsenic	NELAP	0.025		< 0.025	mg/L	1	11/04/2013 15:14	93336
Barium	NELAP	0.005		0.007	mg/L	1	11/04/2013 15:14	93336
Cadmium	NELAP	0.002		< 0.002	mg/L	1	11/04/2013 15:14	93336
Chromium	NELAP	0.01		< 0.01	mg/L	1	11/04/2013 15:14	93336
Lead	NELAP	0.04		< 0.04	mg/L	1	11/04/2013 15:14	93336
Selenium	NELAP	0.05		< 0.05	mg/L	1	11/04/2013 15:14	93336
Silver	NELAP	0.01		< 0.01	mg/L	1	11/04/2013 15:14	93336
Zinc	NELAP	0.01	J	0.0052	mg/L	1	11/04/2013 15:14	93336
SW-846 1312, 7470A IN SPLP EXTRACT								
Mercury	NELAP	0.0002		< 0.0002	mg/L	1	11/04/2013 12:23	93337



Laboratory Results

<http://www.teklabinc.com/>

Client: [REDACTED]

Work Order: [REDACTED]

Client Project: ASARCO 1924220A

Report Date: 04-Nov-13

Lab ID: 13110053-004

Client Sample ID: SB-2 (0.5-1 ft)

Matrix: SOLID

Collection Date: 11/01/2013 13:35

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 1312, 3005A, 6010B, METALS IN SPLP EXTRACT BY ICP								
Arsenic	NELAP	0.025		< 0.025	mg/L	1	11/04/2013 15:18	93336
Barium	NELAP	0.005		0.0104	mg/L	1	11/04/2013 15:18	93336
Cadmium	NELAP	0.002		< 0.002	mg/L	1	11/04/2013 15:18	93336
Chromium	NELAP	0.01		< 0.01	mg/L	1	11/04/2013 15:18	93336
Lead	NELAP	0.04		< 0.04	mg/L	1	11/04/2013 15:18	93336
Selenium	NELAP	0.05		< 0.05	mg/L	1	11/04/2013 15:18	93336
Silver	NELAP	0.01		< 0.01	mg/L	1	11/04/2013 15:18	93336
Zinc	NELAP	0.01	J	0.0067	mg/L	1	11/04/2013 15:18	93336
SW-846 1312, 7470A IN SPLP EXTRACT								
Mercury	NELAP	0.0002		< 0.0002	mg/L	1	11/04/2013 12:25	93337



Laboratory Results

<http://www.teklabinc.com/>

Client: [REDACTED]

Work Order: [REDACTED]

Client Project: ASARCO 1924220A

Report Date: 04-Nov-13

Lab ID: 13110053-005

Client Sample ID: SB-3 (0-0.5 ft)

Matrix: SOLID

Collection Date: 11/01/2013 13:55

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 1312, 3005A, 6010B, METALS IN SPLP EXTRACT BY ICP								
Arsenic	NELAP	0.025		< 0.025	mg/L	1	11/04/2013 15:22	93336
Barium	NELAP	0.005		0.0084	mg/L	1	11/04/2013 15:22	93336
Cadmium	NELAP	0.002		0.0021	mg/L	1	11/04/2013 15:22	93336
Chromium	NELAP	0.01		< 0.01	mg/L	1	11/04/2013 15:22	93336
Lead	NELAP	0.04		1.03	mg/L	1	11/04/2013 15:22	93336
Selenium	NELAP	0.05		< 0.05	mg/L	1	11/04/2013 15:22	93336
Silver	NELAP	0.01		< 0.01	mg/L	1	11/04/2013 15:22	93336
Zinc	NELAP	0.01		0.154	mg/L	1	11/04/2013 15:22	93336
SW-846 1312, 7470A IN SPLP EXTRACT								
Mercury	NELAP	0.0002		< 0.0002	mg/L	1	11/04/2013 12:27	93337



Laboratory Results

Client: [REDACTED]

Work Order: [REDACTED]

Client Project: ASARCO 1924220A

Report Date: 04-Nov-13

Lab ID: 13110053-006

Client Sample ID: SB-3 (0.5-1 ft)

Matrix: SOLID

Collection Date: 11/01/2013 14:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 1312, 3005A, 6010B, METALS IN SPLP EXTRACT BY ICP								
Arsenic	NELAP	0.025		< 0.025	mg/L	1	11/04/2013 15:26	93336
Barium	NELAP	0.005		0.0135	mg/L	1	11/04/2013 15:26	93336
Cadmium	NELAP	0.002		0.0037	mg/L	1	11/04/2013 15:26	93336
Chromium	NELAP	0.01		< 0.01	mg/L	1	11/04/2013 15:26	93336
Lead	NELAP	0.04		2.1	mg/L	1	11/04/2013 15:26	93336
Selenium	NELAP	0.05		< 0.05	mg/L	1	11/04/2013 15:26	93336
Silver	NELAP	0.01		< 0.01	mg/L	1	11/04/2013 15:26	93336
Zinc	NELAP	0.01		0.342	mg/L	1	11/04/2013 15:26	93336
SW-846 1312, 7470A IN SPLP EXTRACT								
Mercury	NELAP	0.0002	J	0.00008	mg/L	1	11/04/2013 12:30	93337



Laboratory Results

<http://www.teklabinc.com/>

Client: [REDACTED]

Work Order: [REDACTED]

Client Project: ASARCO 1924220A

Report Date: 04-Nov-13

Lab ID: 13110053-007

Client Sample ID: SB-4 (0-0.5 ft)

Matrix: SOLID

Collection Date: 11/01/2013 14:25

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 1312, 3005A, 6010B, METALS IN SPLP EXTRACT BY ICP								
Arsenic	NELAP	0.025		< 0.025	mg/L	1	11/04/2013 15:37	93336
Barium	NELAP	0.005		0.0123	mg/L	1	11/04/2013 15:37	93336
Cadmium	NELAP	0.002		< 0.002	mg/L	1	11/04/2013 15:37	93336
Chromium	NELAP	0.01		< 0.01	mg/L	1	11/04/2013 15:37	93336
Lead	NELAP	0.04	J	0.0065	mg/L	1	11/04/2013 15:37	93336
Selenium	NELAP	0.05		< 0.05	mg/L	1	11/04/2013 15:37	93336
Silver	NELAP	0.01		< 0.01	mg/L	1	11/04/2013 15:37	93336
Zinc	NELAP	0.01	J	0.0065	mg/L	1	11/04/2013 15:37	93336
SW-846 1312, 7470A IN SPLP EXTRACT								
Mercury	NELAP	0.0002		< 0.0002	mg/L	1	11/04/2013 12:32	93337



Laboratory Results

<http://www.teklabinc.com/>

Client: [REDACTED]

Work Order: [REDACTED]

Client Project: ASARCO 1924220A

Report Date: 04-Nov-13

Lab ID: 13110053-008

Client Sample ID: SB-4 (0.5-1 ft)

Matrix: SOLID

Collection Date: 11/01/2013 14:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 1312, 3005A, 8010B, METALS IN SPLP EXTRACT BY ICP								
Arsenic	NELAP	0.025		< 0.025	mg/L	1	11/04/2013 15:41	93336
Barium	NELAP	0.005		0.0056	mg/L	1	11/04/2013 15:41	93336
Cadmium	NELAP	0.002		< 0.002	mg/L	1	11/04/2013 15:41	93336
Chromium	NELAP	0.01		< 0.01	mg/L	1	11/04/2013 15:41	93336
Lead	NELAP	0.04	J	0.023	mg/L	1	11/04/2013 15:41	93336
Selenium	NELAP	0.05		< 0.05	mg/L	1	11/04/2013 15:41	93336
Silver	NELAP	0.01		< 0.01	mg/L	1	11/04/2013 15:41	93336
Zinc	NELAP	0.01	J	0.006	mg/L	1	11/04/2013 15:41	93336
SW-846 1312, 7470A IN SPLP EXTRACT								
Mercury	NELAP	0.0002		< 0.0002	mg/L	1	11/04/2013 12:36	93337



Receiving Check List

<http://www.teklabinc.com/>

Client: [REDACTED]

Work Order: [REDACTED]

Client Project: ASARCO 1924220A

Report Date: 04-Nov-13

Carrier: Josh Cerar

Received By: SRH

Completed by: *Emily Pohlman*
On: 01-Nov-13
Emily E. Pohlman

Reviewed by: *Marvin L. Darling II*
On: 04-Nov-13
Marvin L. Darling

Pages to follow: Chain of custody Extra pages included

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>	Temp °C 12.6
Type of thermal preservation?	None <input type="checkbox"/>	Ice <input checked="" type="checkbox"/>	Blue Ice <input type="checkbox"/>	Dry Ice <input type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Reported field parameters measured:	Field <input type="checkbox"/>	Lab <input type="checkbox"/>	NA <input checked="" type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
<i>When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.</i>				
Water - at least one vial per sample has zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials <input checked="" type="checkbox"/>	
Water - TOX containers have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No TOX containers <input checked="" type="checkbox"/>	
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>	
NPDES/CWA TCN interferences checked/treated in the field?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>	

Any No responses must be detailed below or on the COC.

EXHIBIT G

**UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MISSOURI**

Asarco LLC

v.

NL INDUSTRIES, INC., et al.

Case No. 4:11-CV-00864-JAR

EXPERT REPORT

OF



(Paul V. Rosasco, P.E.)

January 27, 2014

I. INTRODUCTION AND SUMMARY OF OPINIONS

This report presents the opinions that I, Paul V. Rosasco, P.E., anticipate providing at the trial of this matter. I have been requested to provide expert opinions on behalf of Asarco LLC (“Asarco”).

A summary of my opinions, to a reasonable degree of scientific certainty, is as follows:

- A. Union Pacific Railroad owns or its predecessors owned railroad lines within St. Francois and Madison Counties that were used to haul ore and other materials to and from the historic mining sites located in the Southeast Missouri Lead District (“SEMO”).
- B. The railroad track ballast and in some instances the grades of these railroad lines were constructed using mining-related waste materials, specifically chat.
- C. Chat contains hazardous substances including cadmium, lead and zinc.
- D. Erosion of and dissolution of metals from the railroad track ballast has resulted in release, or threat of release of cadmium, lead and zinc to surface water and sediment.
- E. The U.S. Environmental Protection Agency has used funds provided by Asarco to conduct response actions to address occurrences of cadmium, lead and zinc in surface water and sediment within St. Francois and Madison Counties.

This report is based on data available at the time it was prepared and my work is continuing. I reserve the right to amend or revise my opinions as further information becomes available, including but not limited to review of environmental data obtained by Defendants or Defendants’ experts when it becomes available, review of additional documents that Plaintiff’s Counsel have requested from the Defendants, and deposition

transcripts of the Defendants' employees, representatives and experts and fact witnesses in this matter. I also reserve the right to express new opinions in response to new information or in response to opinions that may be expressed by Defendants' experts.

II. QUALIFICATIONS AND PUBLICATIONS

I am a geologist, hydrogeologist and civil engineer and have been working on investigation and remediation of contaminated sites and radioactive disposal sites for over 30 years. I have been responsible for and involved in the performance of Remedial Investigations ("RI"), Feasibility Studies ("FS"), Remedial Design ("RD") and Remedial Action ("RA") at Superfund sites for 30 years. I have also been responsible for investigation and assessment of hazardous waste facilities and corrective actions at sites regulated under the Resource Conservation and Recovery Act ("RCRA") or state-equivalent Superfund and hazardous waste corrective action programs.

My experience includes evaluation of existing data and development of scopes of work; negotiation of scopes of work, administrative orders and consent decrees; implementation and supervision of remedial investigations, treatability studies, feasibility studies, remedial designs, remedial actions, and removal actions; operations and maintenance ("O&M") of remedial and removal actions; and performance and effectiveness evaluations of O&M activities. I have performed these activities at a variety of Superfund and RCRA sites.

I have been qualified by several federal courts as an expert in the areas of hydrogeology, contaminant occurrence, fate and transport, remedial action technologies, site remediation, costs of remedial actions, and consistency of site investigations and

remedial actions with the National Contingency Plan (“NCP”). A copy of my current curriculum vitae, including a list of publications, is included as Attachment 1 to this report. A listing of cases in which I have provided expert testimony during deposition or at trial during the last four years is included in Section VII of this report.

III. DATA AND OTHER SOURCES OF INFORMATION CONSIDERED

In addition to my education, experience and training, I considered the documents listed in Attachment 2. I also travelled to and inspected various active and abandoned railroad lines in St. Francois and Madison Counties on December 3, 2013.

IV. STATEMENT OF OPINIONS; BASIS AND REASONS FOR OPINIONS

A. Union Pacific Railroad owns or its predecessors owned railroad lines within St. Francois and Madison Counties that were used to haul ore and other materials to and from the historic mining sites located in Southeast Missouri

The Southeast Missouri Lead District is located in southeastern portion of the state near the towns of Bonne Terre, Farmington, and Fredericktown, approximately 80 miles south of St. Louis. Three lead/zinc sub-districts (Old Lead Belt, Mine La Motte-Fredericktown, and Viburnum Trend) and several minor sub-districts are located in a region referred to as the Southeast Missouri Lead District (U.S. Geological Services, 2008). Arsenic, cadmium, cobalt, copper, lead, nickel, and zinc are the primary trace elements associated with the sulfide minerals of the Mississippi Valley Type ore deposits present in the district (U.S. Geological Services, 2008). The railroad lines that served the Old Lead Belt mining district in St. Francois County and the Mine LaMotte-

Fredericktown district in adjacent Madison County portions of SEMO are of particular interest for this report.

The first railroad constructed in St. Francois County was the St. Louis & Iron Mountain & Southern Railroad (also referred to as the St. Louis, Iron Mountain & Southern Railroad or the St. Louis and Iron Mountain Railroad) which in 1859 completed a line from St. Louis to Pilot Knob (near Ironton) in Iron County (Akers, 1938, NewFields, 2007, Friends of Steam Railroading, 2012). The line was constructed to facilitate transportation of iron ore to St. Louis (Akers, 1938, NewFields, 2007, Friends of Steam Railroading, 2012). This line entered the western portion of St. Francois County near Bismarck and continued south through St. Francois County to Pilot Knob in Iron County (Asher & Adams, 1872, G.W. & C.B. Colton & Co., 1873, 1876, 1881, and 1882, Higgins & Co., c1887, Galbraith, c1898, Akers, 1938, New York, 185?, Keeler, 1867, Heubach, 1879, Rand, McNally & Co., 1882, 1883, and 1892, Knight, Leonard & Company, 1892, and Friends of Steam Railroading, 2012). The first extension of the St. Louis & Iron Mountain & Southern (the Belmont Branch) was completed in 1869 and ran 120 miles from Bismarck in St. Francois County through St. Francois, Madison and Bollinger Counties to Allenville in Cape Girardeau County and further to the southeast through Scott County to the town of Belmont (Asher & Adams, 1872, G.W. & C.B. Colton & Co., 1873, 1876, 1881, and 1882, Higgins & Co., c1887, Galbraith, c1898, Akers, 1938, New York, 185?, Keeler, 1867, Heubach, 1879, Rand, McNally & Co., 1882, 1883, and, 1892, Knight, Leonard & Company, 1892, and Friends of Steam Railroading, 2012).

Additional lines were constructed by the St. Louis & Iron Mountain & Southern and by other railroad companies including the St. Joe & Desloge Railroad, Mississippi River and Bonne Terre Railroad (“MR&BTRR”), St. Francois County Electric Railroad, and the Illinois Southern Railroad, among others, to facilitate movement of materials and traffic developed by the lead mining industry in SEMO (NewFields, 2007, Missouri State Historical Society CP-Hill Collection 1903-1950, and Public Service Commission of the State of Missouri, 1914).

The MR&BTRR was formed on May 11, 1888 (Missouri-Illinois Railroad, 2012) and constructed a line from Bonne Terre to Riverside in Jefferson County and later extended the line from Bonne Terre to Doe Run (Mississippi River and Bonne Terre Railroad, 2012, Galbraith, c1898). MR&BTR built a branch line to Leadwood and there were many additional miles of feeders, switches and sidings (Mississippi River and Bonne Terre Railroad, 2012). The MR&BTRR passed through the towns of Bonne Terre, Desloge, St. Francois, Flat River, Rivermines, Elvins and Doe Run (Mississippi River and Bonne Terre Railroad, 2012). The MR&BTRR later purchased the St. Francois County Electric line (Akers, 1938).

The Missouri Pacific Railway was created in 1876 by investors who purchased the Pacific Railroad (UP, Chronological History, 2013). In 1881, the Missouri Pacific gained control of the St. Louis & Iron Mountain & Southern Railroad and in 1917 the two railroads were reorganized and merged into the Missouri Pacific Railroad Company (UP, Chronological History, 2013, and Parks, 2011a). In 1929, the Missouri Pacific bought controlling interest in the Missouri-Illinois R.R. Co. (formerly the Illinois Southern which itself was a consolidation of the Illinois Southern and the Southern

Missouri Railway) which also leased the MR&BTRR (Akers, 1938, Missouri-Illinois Railroad, 2012, and Parks, 2011a).

The Missouri Pacific gained controlling interest of both the Missouri-Illinois and the MR&BTRR on July 1, 1929 (Akers, 1938, Parks, 2011a, and Parks, 2011b). Specifically, the Missouri-Illinois filed an application with the Interstate Commerce Commission (“ICC”) to acquire control of the MR&BTRR and the Missouri Pacific filed an application with the ICC to acquire control of the Missouri-Illinois (ICC, 1929). The ICC subsequently approved both applications (ICC, 1929). In 1945, the Missouri-Illinois filed an application with the ICC to purchase the MR&BTRR and said application was subsequently approved by the ICC (ICC, 1945). In 1956, after 23-years in trusteeship, the Missouri Pacific was reorganized and the various Gulf Coast Lines (*e.g.*, NOTM) were absorbed into the Missouri Pacific (Parks, 2011a). On November 1, 1978, the Missouri-Illinois was merged into the Missouri Pacific (Parks, 2011a and 2011b).

In 1980, the Union Pacific, Missouri Pacific, and Western Pacific railroads filed merger applications with the ICC which subsequently approved the merger in 1982 (UP, Chronological History, 2013). On January 1, 1997, the Missouri Pacific Railroad legally merged into the Union Pacific Railroad (“UPRR”) with UPRR remaining as the surviving corporation (UP, Chronological History, 2013). Consequently, UPRR is the ultimate successor in the ownership of the various rail lines within St. Francois and Madison Counties.

Nearly all of the rail lines in St. Francois and Madison Counties are or were owned by Union Pacific or its predecessors (Figure 1 in Attachment 3). Some of these railroad lines are still in use today by Union Pacific while others were previously

abandoned by Union Pacific or its predecessor Missouri Pacific (Figure 1). Railroad lines within St. Francois County that are still in use or that have not been abandoned include:

- the former St. Louis, Iron Mountain and Southern line from St. Louis to Pilot Knob;
- portions of the former MR & BTRR line from Bonne Terre to Derby and portions of the Hoffman branch; and
- the former Illinois Southern line from Bismarck to St. Genevieve.

All of these lines are owned and operated by Union Pacific (IDOT, 2006). These lines are shown on Figure 1 as solid lines with yellow highlighting indicating they are owned by Union Pacific.

Railroad lines within St. Francois and Madison Counties that have been abandoned by Union Pacific, Missouri Pacific or their predecessors include:

- the former St. Louis, Iron Mountain Southern Railroad's Belmont Branch (subsequently owned by Missouri Pacific) that previously extended from Bismarck to Knob Lick, into Madison County, through Fredericktown southeast to Marquand and then through Bollinger County to Belmont/Whitewater (ICC, 1972, 1970a and 1970b);
- most of the former MR&BTRR line that extended from Valles Mines just north of St. Francois County to Bonne Terre (ICC, 1968);
- a 1.1 mile section of the former St. Joe Railroad and former MR&BTRR lines adjacent to the Bonne Terre Industrial Lead site (Union Pacific, 2000a and 2000b);

- the former MR&BTRR Turpin Branch that extended Derby south to Turpin (ICC, 1941a and 1941b);
- the former MR&BTRR Gumbo and Mitchell Branches out of Elvins;
- much of the former MR&BTRR Hoffman Branch to Leadwood (ICC, 1965);
- the former MR&BTRR Crawley Branch that extended east from near Flat River; and
- the former St. Francois County Electric line that extend from near Flat River to DeLassus where it connected with the former MR&BTRR Belmont Branch.

The locations of the abandoned lines are shown as dashed lines on Figure 1 with those previously owned by Union Pacific, Missouri Pacific or their predecessors highlighted in yellow.

B. The railroad track ballast and in some instances the grades of these railroad lines were constructed using mining-related waste materials, specifically chat.

Track ballast for the various railroad lines within St. Francois and Madison counties was constructed exclusively or predominantly from chat (MSHS CP-Hill Collection, 1903-1950, Missouri Public Service Commission, 1914, Hamilton, 1915, Missouri Bureau of Geology and Mines, 1921, The Doe Run Company, 2003, and NewFields, 2007). In addition, chat was used almost exclusively where large quantities of fill were needed to meet grade requirements (NewFields, 2007). Furthermore, Missouri Pacific stated that approximately 30 miles of the St. Louis, Iron Mountain &

Southern Railroad Belmont Branch line was constructed using tuff (a local term used in southeast Missouri to describe lead-bearing barite rock) and rock tailings (ICC, 1970a).

Chat is a term applied at the lead and zinc mines of Missouri to mine tailings or waste after the mineral content has been removed (Missouri Bureau of Geology and Mines, 1921, EPA, 2012a). Ore production in the SEMO consisted of crushing and grinding the rock to standard sizes and separating the ore (EPA, 2007a). Ore processing accomplished using dry gravity separation produced a fine gravel waste commonly called “chat” that typically ranges in diameter from $\frac{1}{4}$ to $\frac{5}{8}$ inches (EPA, 2007a). Wet washing or floatation separation of ore resulted in the creation of sand and silt size material called tailings.

Chat is ore bearing rock, broken into small angular pieces averaging $\frac{1}{4}$ in. to $\frac{1}{2}$ in. in diameter (Hamilton, 1915). It is refuse from the jigs at the lead and zinc mines after the mineral has been separated from the stone (Hamilton, 1915).

In the southeastern mining districts of Missouri, chats were chiefly composed of dolomite (Missouri Bureau of Geology and Mines, 1921). Dolomite is a variety of limestone or marble rich in magnesium carbonate (Bates and Jackson, 1980). Crushed limestone is reported (Hamilton, 1915) to make the best ballast under any traffic, or in any locality. Chat ballast was used for ballast by all of the railroads entering the mining districts of Missouri, Kansas, Oklahoma and Arkansas and was transported hundreds of miles (Hamilton, 1915).

During my December 2013 visit to the SEMO area and inspection of various abandoned and active railroad beds, I observed the presence of coarse sand/fine gravel consistent with chat/mining waste in the ballast of the rail beds and as fill material

beneath railroad grades and within bridge abutments. Photographs of some of the locations I visited are contained in Attachment 3.

As discussed further below, the results of environmental sampling further support the presence of chat/mining waste within the railroad ballast, embankment, and bridge abutment materials along active and abandoned rail lines in St. Francois and Madison Counties. Specifically, samples of railroad ballast obtained by NewFields in 2006 (NewFields, 2007) and Asarco in 2013 contained elevated levels of cadmium, lead and zinc. In addition, the ratio of zinc to cadmium in the various samples of railroad ballast obtained by NewFields and Asarco are comparable to the zinc to cadmium ratios reported for the mill waste from the six large mining waste piles in St. Francois County (NewFields, 2007 and 2006).

C. Chat contains hazardous substances including cadmium, lead and zinc.

In 1992, EPA listed the Big River Mine Tailings/St. Joe Minerals Corp. site on the National Priorities List (EPA, 2012b). In 1997, EPA issued an Administrative Order on Consent to The Doe Run Resources Corporation and ASARCO Incorporated for performance of a Remedial Investigation/ Feasibility study for the St. Francois County mined areas (EPA, 1997a). A Focused Remedial Investigation was completed by NewFields (2006).

In a July 17, 2006 meeting, the EPA requested that The Doe Run Company conduct an investigation to characterize historic railroads in St. Francois County, with specific attention given to cadmium, lead, and zinc content in the ballast material and the volume of ballast (NewFields, 2007). A field investigation was conducted on November

14-17, 2006 following agency review (MDNR, 2006a) of a Field Sampling Plan (RRFSP) dated October 16, 2006 (NewFields, 2007). Thirteen (13) locations along the historic railroads were identified in the RRFSP to assess the cross-sectional area and sample remaining railroad ballast (NewFields, 2007). NewFields reports that no clear evidence of a railroad could be found at the HRR-7 location, so the HRR-14 location was added upon obtaining access (NewFields, 2007). Of the 13 transects, 12 were sampled and cross sections were measured at 13 locations and additional field volume estimates were made at three other locations (NewFields, 2007). All transect locations were on private land or within St. Joe State Park and access was obtained by The Doe Run Company prior to inspection (New Fields, 2007).

The results of the track ballast sampling and volume estimation efforts were presented in the draft Historic Railroads – St. Francois County Mined Areas report prepared by NewFields and dated January 29, 2007. A copy of the table in the NewFields 2007 report that summarizes the results of the track ballast sampling is presented as Table 1 (Attachment 3).

Asarco collected samples of railroad ballast from property formerly owned by Union Pacific at the abandoned MR&BTRR rail line located adjacent to the Bonne Terre Tailings Site on City of Bonne Terre property in St. Francois County. In addition, a sample was obtained at a location on City of Bonne Terre property along this same rail line nearly 3,000 ft south-southwest of the tailings pile. The locations of these samples are shown on Figure 2 in Attachment 3 based on information presented on Deposition Exhibits 11 and 23. Photographs of these sample locations are contained in Deposition Exhibit 27. These samples were analyzed for total and leachable metals (TekLab, 2013a

and 2013b). The results of this sampling are presented on Table 2 (Attachment 3) which is a summary of Deposition Exhibit 24 and is based on the TekLab, Inc. analytical laboratory reports dated November 4, 2013 (Deposition Exhibits 25 and 26).

ASARCO also collected samples (SB-5 and SB-6) of soil located near the abandoned Hoffman Branch line between Leadwood and Bonne Terre. The locations of these samples are shown on Figure 3 in Attachment 3. These samples were obtained at a distance from the former rail line outside the right of way, and the rail line and track near these sampling locations were elevated on a bridge, where chat and ballast would not have been used. Therefore, SB-5 and SB6 are considered to represent control samples. Soil samples from these two locations were submitted to TekLab for analyses and the results of these analyses are summarized on Table 3 in Attachment C.

Asarco also collected samples (SB-7, SB-8 and SB-9) of railroad ballast from locations formerly owned by Union Pacific along the abandoned Missouri Pacific line (former St. Louis, Iron Mountain & Southern "Belmont Branch") located on City of Fredericktown property in Madison County. The locations of these samples are shown on Figure 4 in Attachment 3. These samples were analyzed for total and leachable metals (TekLab, 2013c and 2013d). The results of this sampling are presented on Table 4 in Attachment 3.

The results of both the NewFields and Asarco sampling of railroad ballast in St. Francois and Madison Counties detected the presence of elevated levels of cadmium, lead and zinc in the railroad ballast. Cadmium, lead and zinc have been designated hazardous substances by EPA (40 CFR § 302.4).

D. Erosion of and dissolution of trace metals from the railroad track ballast has resulted in release, or threat of release of cadmium, lead and zinc to surface water and sediment

According to EPA, chat, also known as granular mine tailings, is composed of chert-like material, containing lead, zinc and cadmium contaminants (EPA, 2012a). EPA indicates that when left exposed to the environment, the lead in chat can be a hazard to human health (EPA, 2012a). Chat particles can enter soil, surface water, groundwater, and air (EPA, 2012a). Exposure to lead has been known to cause learning disabilities and damage the human immune, blood and nervous systems (EPA, 2012a). Children are the most susceptible to these effects (EPA, 2012a). EPA (2012a) indicates that chat can be used safely when its particles are encapsulated in asphalt or concrete because the asphalt and concrete bind chat in a solid mixture so its particles are unlikely to be spread by wind or water.

The various tailing piles located within the Old Lead Belt including the Bonne Terre Mine Tailing Site, Doe Run Mine and Desloge Mine Tailing Sites (aka the Big River tailings), Elvins Mine Tailings, Federal Mine Tailings (St. Joe State Park), Leadwood Mine Tailings, and National Mine Tailings have collectively been identified by EPA as the Big River Mine Tailings/St. Joe Minerals Corp. Superfund Site (EPA, 2012b Big River Mine Tailings/St. Joe Minerals Corporation Site Description). EPA has indicated that these tailings contain residual lead contents of about one-half percent and other minerals including cadmium and zinc are present in the tailings (EPA, 2012b). EPA indicates that the State of Missouri Department of Conservation has detected elevated lead levels in fish downstream of the mining area above World Health Organization standards. EPA also indicates that dust created by wind erosion

contaminates the surrounding area and is a potential hazard to residents (EPA, 2012b). These exposures have caused elevated blood lead levels in children in the area (EPA, 2012b).

EPA indicates that the presence of elevated levels of lead, cadmium and zinc have resulted in threats or potential threats to human health and the environment, specifically:

- Surface water and various forms of biota in the Big River contain elevated concentrations of lead;
- Wind erosion and airborne dust have transported contaminants to the surrounding area and are a potential hazard to on-site workers, residents, and children;
- Fish in the Big River have shown elevated levels of lead; and
- People on-site and in the areas surrounding the mine waste piles are at risk of being exposed to contaminants in the dust and soil.

To address these risks, EPA in conjunction with the various potentially responsible parties including Doe Run Resources Corp, St. Francois County Environmental Corp., Asarco, NL Industries, the Missouri Department of Natural Resources (“MDNR”) and City of Park Hill initiated a series of non-time critical response actions to address the source releases from the mine waste areas in 1995 (EPA, 2012b.) EPA also requested Doe Run and Asarco to prepare a remedial investigation/feasibility study (RI/FS) in 1997 (EPA, 2012b).

Comparison of the results of laboratory analyses of railroad ballast samples obtained by NewFields in 2006 (NewFields, 2007) and Asarco in 2013 and 2012 (Integer, 2012) to risk-based concentrations established by EPA and MDNR indicates that the presence of cadmium, lead and zinc poses a threat or potential threat to human health and

the environment. EPA regional screening values for industrial exposure to these metals are 800 milligrams per kilogram (mg/kg) for lead, 80 mg/kg for cadmium, and 31,000 mg/kg for zinc (EPA, 2013). Nearly all of the lead results and one of the cadmium results for the railroad ballast samples obtained by NewFields exceed these levels. Similarly, most of the lead results for the railroad ballast samples obtained by Asarco also exceed EPA's risk-based level for industrial uses (EPA, 2013).

These data indicate that the presence of chat in railroad ballast presents a threat or potential threat to human health. The various active and abandoned rail lines within St. Francois and Madison Counties traverse through residential, commercial and recreational areas. To ensure that human health and the environment will be protected, EPA believes that the ultimate use of chat generally should not allow people, in particular young children, to come into direct contact with any raw chat (EPA, 2007a). EPA further states that because chat contains lead, cadmium, zinc or other metal contaminants at levels that present a risk to both human health and the environment, using chat in situations that would allow people or ecological receptors (*e.g.*, animals, plants, and fish) to regularly come into contact with the material could cause sufficient risks that warrant remedial action.

EPA's regional screening values (EPA, 2013) for residential exposure to these metals are 400 mg/kg for lead, 7 mg/kg for cadmium, and 2,300 mg/kg for zinc (EPA Regional Screening Levels, May 2013). Nearly all of the lead results, most of the cadmium results, and one of the zinc results for the railroad ballast samples obtained by NewFields exceed these levels. Similarly, nearly all of the lead results and many of the cadmium results for the railroad ballast samples obtained by Asarco exceed these levels.

Therefore, the presence of chat in railroad ballast presents a threat or potential threat to human health.

EPA has established regulations specifying Criteria for Safe and Environmentally Protective Use of Granular Mine Tailings Known as “Chat” (EPA, 2007a, 2007b, 2007c, and 2012a). One of the criteria specified by EPA for chat use is for the product to be tested using the Synthetic Precipitation Leaching Procedure (“SPLP”) and for the leachate from such testing to meet the National Primary Drinking Water Standards Maximum Contaminant Level (“MCL”) for lead of 0.015 milligrams per liter (mg/L) and cadmium of 0.005 mg/L and the National Recommended Water Quality Criteria chronic standard for zinc of 120 micrograms per liter (ug/L) (EPA, 2007a, 2007b and 2007c).

Samples of railroad ballast in St. Francois and Madison Counties obtained by Asarco in 2013 were subjected to SPLP testing. The results of this testing indicated that three out of the four railroad ballast samples obtained from St. Francois County exceed the above listed criteria for lead and one of the samples exceeded the criteria for zinc. In addition, all three of the railroad ballast samples obtained from Madison County exceed the SPLP criteria for lead. Therefore, the chat in the railroad ballast presents a risk of leaching and dissolved phase transport of lead and zinc to surface water and consequently a threat or potential threat of release.

MDNR has indicated that Missouri does not have specific numeric criteria for metals in sediment and that likewise the EPA has not yet established federal guidelines for toxic chemicals in stream or lake sediments (MDNR, 2011 Big River, Flat River Creek and Tributary TMDL Information Sheet). In lieu of such criteria, Missouri uses the Probable Effect Levels (“PELs”) suggested by McDonald, *et. al*, 2000 to evaluate the

concentrations of trace metals in sediment (MDNR, 2011). PELs are the concentrations at which some toxic effect on aquatic life is likely (MDNR, 2011). The Consensus-Based Probable Effects Concentrations (“PEC”) established by McDonald are concentrations at which toxicity to benthic organisms is probable. The PELs for cadmium, lead and zinc are 4.98 mg/kg, 128 mg/kg and 459 mg/kg, respectively (McDonald, *et al.*, 2000).

Comparison of the cadmium, lead and zinc levels found in the railroad ballast chat samples obtained by NewFields (listed above) indicates that most of the cadmium results, all of the lead results, and the majority of zinc results exceed the Consensus-Based PECs. Similarly, nearly all of the railroad ballast chat samples obtained by Asarco from the Bonne Terre and Fredericktown sampling locations (Figures 2 and 4) contained lead and zinc at concentrations above their respective PECs and all of the samples obtained from rail line ballast in in the Bonne Terre area (Figure 2) contained cadmium at concentrations above its PEC. In contrast, none of the results from the “control” soil samples obtained in the Leadwood area (Figure 3) contained cadmium, lead or zinc above the PELs. Therefore, chat in railroad ballast beneath active or abandoned rail lines presents a threat or potential threat of release to the environment.

MDNR has also published a Risk-Based Corrective Action Technical Guidance that contains ecological risk-based target levels for protection of aquatic life and human health from chronic and acute exposures to chemicals of concern in water including cadmium, lead and zinc (MDNR, 2006b). The target levels for chronic exposure to cadmium, lead and zinc are 0.2 ug/L, 1 ug/L, and 59 ug/L, respectively, which are equivalent to 0.0002 mg/L, 0.001 mg/L and 0.059 mg/L, respectively. Railroad ballast samples obtained by Asarco were subjected to SPLP testing to assess the leachability of

cadmium, lead and zinc from chat ballast (Tables 2 and 4 in Attachment 3). Results of this testing indicated that three of the four railroad ballast sample locations in Bonne Terre and one of the locations near Fredericktown exceeded the MDNR ecological risk-based target levels for cadmium, lead and/or zinc. None of the soil samples obtained from the Leadwood area contained detectable levels of leachable cadmium or leachable zinc at concentrations greater than the MDNR risk-based target levels although leachable levels of lead in the soil samples from the Leadwood area did exceed the MDNR risk-based levels.

A study by the U.S. Fish and Wildlife Service (“USFWS”) determined that elevated residues of lead, cadmium and zinc were found in every biological form examined—algae, rooted plants, crayfish, mussels and fish (Schmitt and Finger, 1982). Furthermore, results of the USFWS survey corroborated the findings of the Missouri Department of Conservation that lead residues in edible portions of some fish from affected reaches of the Big River presently exceed recommended levels for human consumption (Schmitt and Finger, 1982). The USFWS study also found that most of the metals in surface water derived from mine tailings are transported in the solid phase, and concentrations (as well as mass) in the suspended load increase with surface water flow (Schmitt and Finger, 1982).

A study recently completed by the U.S. Geological Survey (“USGS”) found that about half of the ground-feeding songbirds in the SEMO mining district contained toxic levels of lead in their blood and internal organs (USGS, 2013, and Beyer, *et al.*, 2013). The results of this study indicate that chat in railroad ballast presents a potential threat of release to the environment. This study found that soil lead concentrations in SEMO were

well above those that would be considered hazardous based on ecological risk assessment guidelines. They specifically cited the cleanup levels derived in ecological risk assessments and published in EPA Records of Decision for the following sites:

1. 380 mg/kg of lead as a preliminary goal based on robins (Jacobsville Neighborhood Soil Contamination Site, USEPA, Region 5, September 2009, http://www.epa.gov/region5/cleanup/jacobsville/pdfs/jacobsville_rod_200909.pdf;
2. 400 mg/kg of lead as a cleanup level based on wildlife feeding on earthworms in the Tri-State Mining District (OU3 and OU4, Cherokee County, KS, Superfund Site, USEPA, September, 29, 2006, <http://www.epa.gov/superfund/sites/rods/fulltext/a2006070001149.pdf>;
3. 500 mg/kg of lead as a cleanup level based on exposure of ground-feeding insectivores (OU4, Tar Creek Superfund Site, USEPA, Region 6, February 20, 2008, http://www.epa.gov/region6/6sf/oklahoma/tar_creek/ok_tar_creek_ou4_rod_200802.pdf; and
4. 605 mg/kg of lead as the recommended remedial goal based on exposure of shrews and woodcock (Raleigh Street Dump Site, USEPA, Region 4, June 2009, <http://www.epa.gov/superfund/sites/rods/fulltext/r2009040003099.pdf>.

The results of the NewFields and Asarco sampling of railroad chat ballast in St. Francois and Madison Counties substantially exceed all of these levels.

During my site visit, I personally observed erosion of chat ballast and embankment fill from railroad lines and bridge abutments in St. Francois and Madison Counties owned or previously abandoned by Union Pacific or its predecessors.

Photographs of some of the locations I observed are contained in Attachment 3. A 2007 photograph of the Union Pacific line near Bonne Terre shows wash outs of fill material from beneath the rail line (Conboy, 2007). Furthermore, in its 1970 Response to Questionnaire, Missouri Pacific indicated that 30 miles of the former St. Louis, Iron Mountain & Southern Belmont Branch line was constructed using tuff and rock tailing and that various embankments require restoration to permit retention of additional ballast which is needed (ICC, 1970a). Based upon findings and data documenting extensive use of mining waste by Union Pacific Railroad predecessors in Southeast Missouri, and based upon testing of that abandoned mining waste showing very high levels of lead and other metals, it is very likely that the abandoned Bismarck to Whitewater line is similarly contaminated.

Union Pacific predecessors also hauled ore, chat, and other materials from the various mines in the SEMO districts (Akers, 1938, ICC, 1972, 1970a, MSHS CP-Hill Collection, 1903-1950, and NewFields, 2007). Chat was hauled in open topped gondola rail cars (MSHS, 1912). Wrecks and derailment of chat trains occurred resulting in releases of chat to the environment (MSHS CP-Hill 1903-1950 collection).

Based upon findings and data documenting extensive use of mining waste by Union Pacific Railroad predecessors in Southeast Missouri, based upon testing of that abandoned mining waste used as ballast showing very high levels of lead and other metals, and based upon visible erosion of track ballast, embankments and bridge abutments, it is very likely that materials used to construct the existing and abandoned rail lines in the St. Francois and Madison Counties area are contaminated and causing environmental impacts in the SEMO Site.

E. The U.S. Environmental Protection Agency has used funds provided by Asarco to conduct response actions to address occurrences of cadmium, lead and zinc in surface water and sediment within St. Francois and Madison Counties.

The U.S. Department of Justice (“U.S. DOJ”) filed a proof of claim in the Asarco bankruptcy case on behalf of the EPA for past and future response costs related to three SEMO sites; the Big River Mine Tailings, Federal Mine Tailings, and the Madison County Mines sites (U.S. DOJ, 2006a). EPA claimed a total of between \$78 million and \$88 million for past and future response costs for the SEMO sites (U.S. DOJ, 2006a). The U.S. DOJ also filed a Proof of Claim on behalf of the U.S. Department of Interior (“DOI”) and U.S. Department of Agriculture (“USDA”) for natural resource damage claims for an estimated amount of nearly \$338 million (U.S. DOJ, 2006b.) MDNR submitted a Proof of Claim for the state’s share of future response costs and for operations and maintenance costs of over \$10 million (MDNR, 2006c). MDNR also submitted a Proof of Claim for natural resource damages of \$506 million (MDNR, 2006d).

The U.S. Bankruptcy Court for the Southern District of Texas Corpus Christi Division issued a settlement agreement March 2008 regarding the various claims relative to the SEMO Sites. Pursuant to this Settlement Agreement, EPA was allowed a general, unsecured claim in the total amount of \$37,500,000 for all EPA and MDNR response action cost claims for the three SEMO sites. The DOI was allowed a general unsecured claim for past costs of \$233,000 and a general unsecured claim of \$29,767,000 for DOI/USDA and MDNR natural resource damage assessment costs for the three SEMO sites. MDNR was allowed a general unsecured claim for past natural resource damage assessment costs and future oversight and/or maintenance response costs in the total

amount of \$1,250,000. In addition, the DOE RUN Resources Company was allowed a general unsecured claim in the amount of \$759,327.80 in connection with any and all past or future response costs or natural resource damages related to three SEMO sites.

As a result of the Asarco bankruptcy settlement, EPA established special accounts to pay for past and future cleanup costs incurred by federal and state agencies at more than 80 Superfund sites contaminated by mining operations in Missouri and 18 other states (EPA, 2011a). Pursuant to the Asarco Bankruptcy settlement, EPA distributed the funds to clean up the various Superfund sites including the Big Rive Mine Tailings/St. Joe Minerals, Federal Mine Tailings, and Madison County Mines Project sites in SEMO (EPA, 2012b). EPA set aside a total of \$44 million for cleanup of the SEMO sites (EPA, 2012b). I understand EPA is utilizing these funds in compliance with the NCP. EPA has indicated that nearly all of the costs for cleanup of these sites will be covered by funds from the special account established in 2009 as part of the \$1.79 billion Asarco bankruptcy settlement (EPA, 2011a).

V. EXHIBITS SUPPORTING OPINIONS

Exhibits supporting or summarizing my opinions are included in Attachment 3. These exhibits are preliminary as I may change the format of the exhibits and/or add to or update the information depicted on the above exhibits. I may also develop additional exhibits based on information drawn from the materials and documents considered in forming my opinions (Attachment 2) and to better illustrate the data and information shown on the exhibits contained in Attachment 3. I may also obtain additional

photographs of the railroad ballast, railroad embankments or other features. I may also

use additional demonstrative exhibits at trial.

VI. COMPENSATION

I am being compensated at the rate of \$200/hour for my work evaluating the various documents and data in this matter, preparing this expert report, preparing for deposition and other activities and at rate of \$100/hour for travel time plus expenses at cost plus 10%. I am to be compensated at the rate of \$400 per hour for my time spent testifying in a deposition or during the trial in this matter.

VII. OTHER TESTIMONY

The other cases in which I have provided expert testimony during deposition or at trial within the past four years are as follows:

Name of Case	Court	Trial or Deposition Testimony
<i>Burley, et al. v. BNSF</i>	U.S. District Court, District of Montana, Billings Division Cause No. CV-07-147-BLG-RFC-CSO; CV-08-30-BLG-RFC-CSO; and CV-07-148-BLG-RFC-CSO	Deposition
<i>Intalco Aluminum Corporation, v. CNI et al.</i>	Superior Court of Washington for Whatcom County, Case No. 06 2 01842 3	Deposition
<i>Michael E. Anderson, et al. v. BNSF Railway Company, et al.</i>	Montana First Judicial Circuit Court, Lewis and Clark County, Case No. ADV-2008-101	Deposition
<i>The Board of County Commissioners of the County of La Plata, Co. v. Brown Group Retail, Inc. et al.</i>	U.S. District Court for the District of Colorado, Case No. 08-CV-0085-LTB-KMT	Deposition and Trial
<i>City of Livingston, et al. v. BNSF Railway Company, et al.</i>	Montana Sixth Judicial District Court, Park County, DV-07-141	Deposition

Attachment 1

Curriculum Vitae of Paul V. Rosasco

PAUL V. ROSASCO, P.E.

**Engineering Management Support, Inc.
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Mr. Rosasco has over 33 years experience in providing supervision, management, and technical review for geological, hydrogeological, and engineering projects. He has designed and implemented geological, hydrogeological and geophysical investigations and environmental monitoring programs for sites ranging from 0.5 acres to over 300 square miles. Mr. Rosasco has extensive project management and technical experience in a wide variety of waste disposal and environmental contamination projects. He has provided design, site engineering, and construction management services and acted as owner's representative for surface and subsurface remediation projects. He has also been involved in a variety of geotechnical, geologic hazard, and water supply evaluation projects.

Mr. Rosasco has 30 years of experience with all aspects of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and National Priorities List (NPL) site projects where he has worked at over 40 Superfund Sites. His experience includes evaluation of existing data and development of scopes of work, negotiation of scopes of work, administrative orders and consent decrees, implementation and supervision of remedial investigations, feasibility studies, remedial designs, remedial actions, removal actions and performance and effectiveness evaluations of operation and maintenance of removal and remedial actions.

Mr. Rosasco also has 30 years of experience with Resource Conservation and Recovery Act (RCRA) facilities where he has performed characterizations of generator, treatment, storage, disposal sites, assessed the nature and extent of contamination, and evaluated and designed corrective measures. He has participated in the development and review of RCRA Part B applications, groundwater monitoring and corrective measure programs and closure plans. Mr. Rosasco has also developed operations plans and designed and facilitated permitting for solid and liquid waste disposal sites.

Mr. Rosasco has provided expert testimony related to groundwater occurrence, flow and chemical transport, the nature, extent and sources of environmental contamination, the necessity and appropriateness of various remedial actions, consistency of response actions with the National Contingency Plan (NCP) and

other environmental regulations, and allocation of response costs. He has been qualified by several federal courts as an expert in the areas of hydrogeology, contaminant occurrence, fate and transport, remedial actions, cost allocation and National Contingency Plan (NCP) consistency. He has also provided expert testimony on the role of environmental issues and site remediation related to property valuation and condemnation proceedings. He has testified at numerous regulatory hearings and public meetings on issues ranging from site selection and the design and operations of waste disposal facilities, environmental contamination and remediation, and water quality standards. He has had his deposition taken thirty-seven times, testified at trial thirteen times and at formal administrative or agency hearings seven times. He has also provided expert assistance related to construction claims and disputes. A listing of matters at which he has provided expert testimony is included as Attachment A.

In addition to expert testimony, Mr. Rosasco has provided expert assistance in support of litigation in a wide variety matters including hydrogeological characterization, nature, extent and causation of contamination, and remedial actions at regional groundwater contamination sites such as the San Gabriel Valley – Baldwin Park Operable Unit, the Suburban Operable Unit and the former Fairchild Industries facility in southern California; the former Lockheed facility in Redlands, CA; regional mining districts including Leadville, CO, Bunker Hill, ID, Crede, CO, and Jamestown CA; petroleum refineries, bulk plants, and retail outlets; and various manufacturing and commercial facilities throughout the country. Mr. Rosasco served as an independent arbiter during settlement negotiations for a leaking underground storage tank site in Colorado and served as the 30-B6 representative relative to the claimed releases from adits, tunnels and portals in the upper portion of the Coeur d'Alene Basin.

EDUCATION

M.E., Engineering Geology, Colorado School of Mines, 1985

B.S., Geology, University of Oregon, 1976

REGISTRATIONS

Professional Engineer – Colorado

Professional Engineer – Washington

Professional Engineer – Illinois (retired status)

MEMBERSHIPS

Association of Groundwater Scientist and Engineers

PUBLICATIONS

1995 Weaver, Jeffrey, D., Digel, Robert, K., and Rosasco, Paul V., Performance of a Post-audit of Groundwater Flow Models Used in Design of a Groundwater Capture/Containment System, in Symposium on Subsurface Fluid Flow (Ground-Water) Model, American Society for Testing and Materials.

1985 Rosasco, Paul, V., Geometric Continuity of Structural Discontinuities, CSM-ONWI Test Site, Idaho Springs, Colorado. Masters of Engineering report, Colorado School of Mines, Golden, Colorado.

1984 Rosasco, Paul, V. and Curry, John, A Cooperative Agreement to Investigate and Remedy Chemical Contamination at the Boulder/Marshall Landfills, Colorado. Prepared for the 5th National Conference on Management of Uncontrolled Hazardous Waste Sites.

1981 Mining Technology Development in Crystalline Rock. "Advances in the Science and Technology of the Management of High Level Nuclear Waste," U.S. Department of Energy.

1980 Mining technology development for hard rock excavation. "Rockstore."

ATTACHMENTS

- A. Selected Mining and Trace Metal/Radionuclide Project Experience
- B. Selected Experience with Cost Allocation and Recovery

Selected Mining and Trace Metal/Radionuclide Project Experience
Paul V. Rosasco, P.E.

1. Burlington Northern & Santa Fe, Railway Co. Railyard, Helena Montana

Mr. Rosasco reviewed documents and offered opinions in an expert report and at deposition regarding historic operations at the railyard that resulted in lead contamination in surface soil and diesel contamination in groundwater at and offsite of the railyard. Mr. Rosasco evaluated the need for remedial action to address this contamination and the costs associated with such actions. Mr. Rosasco evaluated the actions proposed by Plaintiffs' expert and determined that they were unnecessary, disruptive to the community and grossly over-expensive. Mr. Rosasco identified other, less costly approaches to address the remaining very low levels of lead occurrences in soil on the Plaintiffs' properties..

2. Midnite Mine National Priorities List (NPL) Site, Spokane, Washington

Mr. Rosasco evaluated the overall scope, costs and necessity of additional investigations performed by EPA relative to a Remedial Investigation/Feasibility Study at the former Midnite Mine uranium mine near Spokane. Mr. Rosasco reviewed work performed pursuant to the RI/FS relative to the data quality objectives identified by EPA in the various work plans, quality assurance project plan (QAPP) and related addenda. Mr. Rosasco identified work that was unnecessary to meet the purpose and objectives of the RI/FS and the data quality objectives identified in the QAPP and related addenda. Mr. Rosasco also evaluated the work performed by EPA relative to work previously conducted by the mining companies and opined that much of the work conducted by EPA was duplicative to investigations previously conducted at the site and was not needed to assess potential risks posed by the site or to selected remedial actions for the site. Mr. Rosasco detailed specific items that he considered to be unnecessary and identified the actual or estimated unnecessary costs associated with such items. Mr. Rosasco testified during two depositions and provided written testimony at the trial in this matter.

3. Intalco Aluminum Corporation, Ferndale, Washington

Mr. Rosasco performed evaluations, prepared expert reports, and offered opinions during a deposition relative to the nature of releases of toxic substances and resultant contamination, the consistency of prior corrective actions with the Washington Model Toxics Control Act (MTCA), and the costs incurred by the Intalco Aluminum Corporation at its Ferndale facility. Mr. Rosasco identified and evaluated the necessary costs incurred to investigate and remediate past releases or threat of releases of hazardous substances including valuation of air space in onsite permitted hazardous and industrial waste landfills utilized as part of the remedial actions taken at the site.

4. Former Abound Solar Facility, Longmont, Colorado

Mr. Rosasco assessed and inventoried cadmium bearing hazardous wastes and other solid wastes and contaminated wastewaters that were abandoned or threatened to be abandoned as a result of Abound Solar's bankruptcy filing. Mr. Rosasco performed sampling of the interior and exterior areas of the facility to assess potential releases of hazardous materials to floor and dock drains and sediment and soil at the facility. Mr. Rosasco prepared an expert report documenting the presence of hazardous wastes at the facility, violations of hazardous waste management laws and regulations, and the estimated costs to remove the hazardous wastes from the facility.

5. Talache Mine Tailings Site, Atlanta Mining District, Idaho

Mr. Rosasco reviewed information related to site conditions, ownership and operation, causation factors and remediation requirements associated with the 1996 failure of the Talache Mine Tailings pile. Mr. Rosasco provided expert testimony regarding potential cost allocation between the various parties including both past and current owners and operators and the factors affecting the equity of various allocation methods developed by him and by other experts.

6. West Lake Landfill – OU-1, Remedial Design/Remedial Action, Bridgeton, Missouri

Mr. Rosasco is the project manager and lead technical consultant for the remedial design/remedial action to address the presence of radiologically-impacted materials within a former solid waste landfill. Remedial actions selected by EPA include design and installation of a new engineered landfill cap that includes components necessary to address gamma radiation, radon emissions and requirements of the Uranium Mill Tailings Radiation Control Act, armoring of the landfill toe to protect against possible flooding by the Missouri River, consolidation of contaminated soil from adjacent properties and disposal on-site, development and implementation of institutional controls, and development and implementation of long-term groundwater and landfill/radon gas monitoring and site surveillance. Mr. Rosasco supervised a multi-disciplinary technical team composed of five different consulting firms to develop a conceptual remedial design and prepare remedial design planning documents. Mr. Rosasco subsequently supervised preparation of a Supplemental Feasibility Study (SFS) requested by EPA to evaluate possible excavation and on-site and offsite disposal alternatives. The SFS included development of conceptual designs for excavation of overburden waste and soil cover along with solid wastes containing radiologically-impacted materials; design of a possible new engineered onsite disposal cell; evaluation of potential offsite disposal facilities; evaluation of potential impacts to workers and the public including potential traffic and rail accidents, greenhouse gas emissions, potential impacts associated with bird hazards to nearby Lambert-St. Louis International Airport, and worker accidents and exposures; and detailed evaluation of expected costs and schedules for various alternatives for site excavation, offsite or onsite disposal and site restoration. Mr. Rosasco currently is supervising additional activities including a comprehensive groundwater monitoring program, installation of additional fencing and site controls, and various other additional evaluations requested by EPA including evaluations of alternative excavation volumes, alternative landfill cover designs, alternative treatment technologies, and fate and transport modeling of radionuclides.

7. West Lake Landfill – OU-1, Remedial Investigation/Feasibility Study, Bridgeton, Missouri

Mr. Rosasco was project manager and lead technical consultant for the Remedial Investigation/Baseline Risk Assessment/Feasibility Study (RI/BRA/FS) of this NPL Site pursuant to a CERCLA Administrative Order on Consent from EPA Region VII. The Site is a municipal solid waste landfill that contains elevated levels of uranium, radium, thorium and their related decay products resulting in part from use of soil mixed with barium-sulfate waste from uranium recovery operations in conjunction with the Manhattan Project. Mr. Rosasco supervised various field investigations including overland gamma surveys, surface and subsurface soil sampling and analysis, monitoring well construction and sampling, storm water runoff and sediment sampling, and radon flux measurements (large area carbon canisters) and developed supplemental scopes of work for follow-up investigations necessary to complete the RI, BRA and FS. He has been responsible for preparation of various technical reports including work plans, data reports, evaluation of treatability study requirements, and the Remedial Investigation, and Feasibility Study. Mr. Rosasco also supervised preparation of the Baseline Risk Assessment.

8. Groundwater Monitoring Program – Tailing Impoundments, Cotter Canon City Mill

Mr. Rosasco designed a long-term groundwater monitoring program to identify possible leakage from tailings impoundments at this uranium/vanadium mill site. Mr. Rosasco developed the overall approach to development of the groundwater monitoring plan, presented the approach to the State regulatory agency and achieved concurrence from the State on the approach. Mr. Rosasco designed the site characterization program and assisted Cotter with implementation and evaluation of the resultant data including geophysical (resistivity) investigation, soil boring and sampling and monitoring wells installation. Mr. Rosasco evaluated the results of the site characterization effort and prepared technical summaries for submission to the State. At the conclusion of the site characterization effort, Mr. Rosasco prepared a groundwater monitoring plan that presented the overall conceptual model of subsurface conditions beneath the impoundments, the proposed groundwater monitoring network, analyte list and sampling frequency and the data evaluation procedures including statistical evaluations of temporary trends in water quality results.

9. Old Pond Area - Cotter Corporation Mill Site, Canon City, Colorado

Mr. Rosasco prepared a CERCLA feasibility study to evaluate remedial alternatives to address residual soil contamination remaining beneath former tailing ponds at this uranium mill site. Mr. Rosasco's work involved evaluation of the historic soil sampling data relative to potential impacts to groundwater and determination of the extent and volume of soil to be addressed by the remediation activities. Mr. Rosasco developed and evaluated engineering alternatives including for example capping, in situ flushing or stabilization, partial soil removal, or complete soil removal. Mr. Rosasco prepared an NCP style feasibility study report to present the alternatives assessment and address requirements associated with a previously approved Remedial Action Plan and pending uranium mill license renewal. Mr. Rosasco presented briefings of the results of these evaluations at public meetings and at mediation hearings.

10. Denver Radium NPL Site – Operable Unit VIII, Denver, Colorado

Mr. Rosasco provided independent technical review of the remedial design for excavation of soils containing radium and uranium, onsite solidification and stabilization using flyash and cement, placement and compaction of the stabilized material into a monolith and subsequent construction of a multiplayer layer cap over the constructed monolith. Mr. Rosasco subsequently served as the owner's engineer and site representative during the construction activities and acted as technical liaison with the various contractors and regulatory agencies. Mr. Rosasco and other members of his firm developed methods to address unexpected conditions that arose during construction including dust emissions from the processing equipment and kerosene impacted soil from historic rhenium recovery operations to prevent or reduce the size of possible claims for changed conditions and to address regulatory agency concerns. Mr. Rosasco was also responsible for the implementation and evaluation of the onsite and offsite groundwater monitoring, operations and maintenance inspections and reporting, and the long-term maintenance activities at the Site.

Mr. Rosasco also provided technical representation at technical meetings with EPA Region VIII, the Colorado Department of Public Health and Environment, City and County of Denver and local citizens. He provided client representation and technical input to the scoping and review of evaluations being performed by a Peer Review Panel and the Five Year Review. Mr. Rosasco also provided technical assistance and representation during the facilitated dialogue process initiated by EPA Headquarters to resolve citizen and Denver's concerns regarding the protectiveness of the remedy. Mr. Rosasco prepared comments and supervised the overall preparation of comments on EPA's Five Year Review Report. Mr. Rosasco also assisted counsel in development and negotiation of cash-out settlement for his client.

11. Bartlesville Zinc Refinery and Bartlesville National Priorities List Site, Oklahoma

Mr. Rosasco provided expert analysis and expert testimony related to cost recovery and allocation of response costs related to the investigations and clean-up of on-site (RCRA) and off-site (CERCLA) releases of lead, cadmium and arsenic resulting from 85 years of operations at a zinc refinery. Project work included evaluation of past response costs, evaluation of the necessity and consistency with the National Contingency Plan of the costs associated with past and ongoing response actions, and development and implementation of methodologies for the allocation of both on-site response costs incurred under RCRA and the CWA and off-site response costs incurred under CERCLA. Mr. Rosasco also provided expert testimony both in deposition and at trial.

12. Denver Radium Site, Operable Unit III, Denver, Colorado

Mr. Rosasco assisted a prospective purchaser of a portion of Operable Unit III of the Denver Radium Superfund Site. Mr. Rosasco prepared the Materials Management Plan, negotiated soil clean-up levels for radium with the State, and provides technical direction for removal, sampling and disposal of radium soils from utility excavations and new construction. Mr. Rosasco also conducts groundwater and indoor air sampling (radon and volatile organic compounds) as part of ongoing work to assist his client in maintaining bona fide prospective purchaser status.

13. California Gulch National Priorities List (NPL) Site, Leadville, Colorado

Mr. Rosasco provided technical assistance to the Lake County Commissioners in conjunction with EPA and private party investigations, evaluations and remediation associated with the California Gulch "Superfund" site. His involvement included evaluations of remedial alternatives for various mine wastes and development of alternative remedial strategies and evaluation of potential risks posed to children by lead in soil and ground water and evaluation of risks posed by other trace metals in soil and ground water. These evaluations included identification and analysis of potential sources of lead, cadmium, zinc and arsenic contamination of surface water, ground water, soil and sediment and the evaluation of various remedial actions related to source control. At the request of the County, he evaluated numerous mine waste piles and waste rock piles located in a major drainage basin above Leadville and developed alternative remedial designs to reduce the suspended and dissolved metals loading to surface water and ground water and still preserve those piles with historic, cultural, visual or tourist-related significance and value. He also participated in the development of EPA's risk assessments for residential, commercial and recreational properties in the Leadville area. As a result of his evaluation of the correlation between measured blood lead levels and the concentrations of lead in residential yard soils, EPA selected a remediation level of 3,500 ppm for lead in residential soils rather than a 1200 ppm level based on the results of the Integrated Risk, Uptake, Biokinetic (IEUBK) model evaluations. He also participated in the development of alternative remedial strategies for residential soils resulting in implementation of more beneficial measures such as household dust removal, lead paint remediation, and education as an alternative to and prior to any soil excavation and removal.

14. Arsenic Contaminated Soil and Groundwater, Commerce and Ridgeway, Texas

As an expert witness, Mr. Rosasco evaluated occurrences of arsenic in surface soils, surface water and sediment resulting or reportedly resulting from rail transport of arsenic trioxide and subsequent use in manufacturer of various pesticides and herbicides. Evaluations conducted by Mr. Rosasco or under his supervision included development of a database and geographical information system of the thousands of results of various sampling events conducted by various parties, evaluation of historic uses of arsenic in the area including pesticide manufacturer, cotton burr burners, and use for weed control along highways, streets and individual residential lots. Mr. Rosasco evaluated background levels and various cleanup and health-based criteria for arsenic. Mr. Rosasco also evaluated occurrences of arsenic in sediment within the Ridgeway community water system and provided expert opinions regarding the nature and source of reported arsenic occurrences in the community water system.

15. Olympic View Landfill, Port Orchard, Washington

Mr. Rosasco currently provides senior technical review and project coordination for Waste Management Inc. related to completion of a Remedial Investigation and Feasibility Study (RI/FS) of the Olympic View Sanitary Landfill being conducted pursuant to Washington solid waste regulations and Model Toxics Control Act. Mr. Rosasco provides technical direction to various consultants, reviews consultant scopes of work, cost estimates and deliverables, coordinates and manages meetings with regulatory agencies and assists Waste Management with evaluation and implementation of operations and maintenance requirements at the landfill.

16. Weyerhaeuser Pulp and Paper Mill, Longview, Washington

Mr. Rosasco provided quality control and senior technical review in conjunction with the evaluation and demolition of a chlor-alkaloi plant at this pulp and paper mill. During demolition of the chlorine plant, extensive mercury contamination, resulting from losses during operation of the plant, were discovered in the subbasement and underlying soils. Various investigation plans were developed and reviewed to insure that all of the mercury contamination was identified and addressed as part of the demolition activities without significant delay in the demolition and construction schedules.

17. Tulalip Landfill, Snohomish County, Washington

Mr. Rosasco provided senior technical review and project coordination for a group of companies including Waste Management Inc., Monsanto Corporation and the Port of Seattle related to the Remedial Investigation and Feasibility Study (RI/FS) of the Tulalip Landfill. The Tulalip Landfill is a closed landfill located on Tulalip Tribal land in the estuary of the Snohomish River. The landfill was the source of numerous leachate seeps containing lead, cadmium, nickel, mercury, and other trace metals into the estuary potentially affecting freshwater and marine aquatic life. In addition, the Indian tribe, the nearby City of Marysville and numerous private residences relied on ground water for water supply. Numerous terrestrial species including eagles and other raptors, deer and fox were present at the landfill. Mr. Rosasco's work included ground-water modeling to evaluate the potential impact of site metals in ground water on the current water users and in conjunction with projected increased pumping rates anticipated in the future. His work also entailed evaluation of on-site soil, sediment, leachate seep, surface water and ground water and the potential impact such contamination posed to the surrounding estuaries and aquatic ecosystems. He also provided engineering services in conjunction with the technical and cost evaluations of various alternative landfill capping alternatives and leachate and ground water collection and treatment alternatives. During the course of his involvement with this project, he provided project management and project coordination services for the various companies including coordination of the various different consultants involved with the geotechnical and environmental investigations, risk assessment and feasibility studies, coordination between the various consultants and the companies and between the companies and the EPA and the Tulalip Tribe. He also prepared and made numerous technical presentations at various public, agency and legal meetings on behalf of the involved companies.

Subsequent to the completion of the RI/FS, Mr. Rosasco was retained to assist the remedial design/remedial construction team with evaluations of alternatives to extensive soil import requirements. The principal alternative considered was excavation and regrading of refuse from below the water table as an alternative to achieving grades through costly import of offsite borrow soil. The primary issue associated with the refuse regarding alternative was the handling and disposition of large volumes of leachate containing trace metals. Alternatives evaluated included discharge to the nearby sloughs under an NPDES equivalent construction water discharge permit, limited treatment onsite prior to discharge, primary and secondary treatment onsite and offsite disposal. Alternative methods for collecting the leachate including dewatering prior to construction with well points or trenches and dewatering of excavations during construction were also considered. Monitoring programs were developed for all of the onsite discharge alternatives. Results of the various evaluations were presented in technical briefings to representatives of the Tulalip Tribe, EPA Region X and their consultants.

18. Milltown Reservoir NPL Site, Missoula, Montana

Mr. Rosasco was responsible for the development and preparation of the draft Feasibility Study for this Superfund Site that included reservoir sediments contaminated with heavy metals including arsenic, copper, and lead and associated arsenic and heavy metal contamination of ground water and water wells in and around Milltown, Montana. The source of the contamination was reservoir sediments that had accumulated behind the Milltown dam as a result of historic mining and mine waste disposal practices in the Clark Fork River drainage basin. This work entailed investigation of the reservoir sediments using a flat-bottomed boat and a portable drill rig and drive sampling equipment specifically developed by me for this project. The field investigations also included monitor well drilling, installation, development and sampling, and aquifer testing. The work also included geochemical evaluations including evaluation of reduction-oxidation potential (redox) and metals speciation. Remedial alternatives evaluated include various dredging and other sediment removal techniques, operational controls and restrictions for the dam and power plant operations, and provision of alternative water supplies.

19. Colorado School of Mines Research Institute, Golden, Colorado

Mr. Rosasco provided independent technical review of the remedial design and remedial action for excavation of soils containing radium and uranium. His work pertained to a dispute between the owner and the contractor regarding the overall cost of the action, the volume of soil that had been and remained to be excavated, and provisions associated with the lump sum contract for this work. Mr. Rosasco evaluated the site investigation and design data, conducted a site inspection, met with project staff and discussed the extent of the excavation activities to date, remaining soil to be excavated and changed conditions encountered during performance of the remedial action. Mr. Rosasco provided an independent assessment of the site data relative to the estimated volume of soil to be excavated presented in the design documents, the basis for the change conditions, and the accuracy of the soil volumetric data.

20. Proposed Low-Level Radioactive Waste, Western Colorado

Mr. Rosasco was project manager and project geologist/hydrogeologist for a site-selection and site characterization studies for a proposed low-level radioactive waste/uranium mill tailings disposal site proposed for western Colorado. Mr. Rosasco performed regional investigations and evaluations of over a dozen potentially suitable sites located in the western slope of Colorado and develop investigative plans and implanted geologic/hydrogeologic/geotechnical investigations of the clients preferred site pursuant to the requirements set forth in 10 CFR 60 and equivalent state regulations related to low-level radioactive waste disposal sites. Mr. Rosasco prepared various technical reports and presented the results of these evaluations to the radiation control division of the state health department and at public meetings.

21. DOE-Office of Nuclear Waste Isolation, Crystalline Repository Program

Mr. Rosasco served as project geologist and assistance project manager for various technical investigations related to potential development of a high-level radioactive waste disposal repository in crystalline (igneous and metamorphic) rock terrains. Mr. Rosasco performed underground mapping and characterization of rock joints, natural and blast-induced fractures and other geologic discontinuities including development of techniques for and subsequent mapping of horizontal and vertical rock exposures in various tunnels, drifts and audits in the vicinity of an underground test facility in Colorado. Mr. Rosasco prepared an electronic database of the accumulated results and developed and evaluated various statistical and predictive models of the fractures and discontinuities and their characteristics. Mr. Rosasco also participated in evaluations of controlled blasting techniques and fracture permeability studies as well as serving as assistant project manager.

SELECTED EXPERIENCE WITH COST ALLOCATION AND RECOVERY

1. Midnite Mine, Spokane, Washington

Mr. Rosasco evaluated the data quality objectives (DQO) and the data obtained by the mining companies pursuant to an Interim Agreement and Reclamation Plan with the Bureau of Land Management relative to data obtained by EPA pursuant to a Remedial Investigation/Feasibility Study. Mr. Rosasco identified data obtained by EPA that were redundant with the results obtained by the mining company investigations, were not needed to evaluate potential risks posed by the Site or to select a remedy, or that were otherwise not supported or documented by the DQO process and therefore inconsistent with the NCP. Mr. Rosasco evaluated the \$7.65 million in costs incurred by EPA to complete the RI/FS and developed a method for assigning the costs to the various RI/FS activities and identified pro rata costs on a per sample basis. Based on his analysis, Mr. Rosasco opined that \$1.8 million of the costs were associated with duplicative or otherwise unnecessary sampling conducted by EPA. Mr. Rosasco provided testimony during deposition and written trial testimony.

2. Suburban Operable Unit, San Gabriel Valley Superfund Site,

Mr. Rosasco provided expert assistance for mediation between U.S. EPA and a potentially responsible party relative to recovery of past cost claims asserted by EPA. Mr. Rosasco reviewed the available site information, regional groundwater quality information and site-specific soil gas results relative to potential contributions of historic operations at the site and the overall regional groundwater contamination. Mr. Rosasco evaluated volatile organic compound concentrations in groundwater attributable to regional and upgradient sources using chemical equilibrium calculations and compared those to the measured soil gas levels to demonstrate that the observed soil gas readings could be explained by the regional and upgradient groundwater contamination and were necessarily indicative of impacts from historic operations at the site in question. Mr. Rosasco presented his evaluations to the independent mediator and assisted in the mediation of this matter.

3. La Plata County Detention Center, Durango, Colorado

Mr. Rosasco supervised investigations indoor air quality, soil, soil gas and groundwater contamination at and downgradient of the site, evaluated potential sources of contamination, and assessed potential remedial alternatives for a former manufacturing facility contaminated with chlorinated solvents and 1,4-dioxane that is the current site of a county detention center. Mr. Rosasco testified in both deposition and at trial regarding the need for the various investigations and proposed remedial actions, the costs incurred and the consistency of the actions and costs with the NCP. Mr. Rosasco continues to assist La Plata County with ongoing evaluations and remedial action planning.

4. Tosco Refinery, Martinez, California

Mr. Rosasco provided expert assistance and expert testimony regarding claims of fraud, breach of contract claims and counterclaims, allegations of illegal disposal of hazardous wastes by the current and past owners and operators, and general environmental conditions at this nearly 80 year old petroleum refinery. Mr. Rosasco evaluated data and regulatory compliance issues associated with various RCRA Regulated Units, Solid Waste Management Units, aboveground storage tanks, and process units at the refinery and associated off-site facilities. Mr. Rosasco offer opinions during expert deposition regarding the identification and classification of commercial products, solid wastes and hazardous wastes at the refinery. Mr. Rosasco also opined regarding the dates and nature of known releases of petroleum products and wastes relative to the dates of implementation of various provisions of the hazardous waste regulations.

5. Baldwin Park Operable Unit of the San Gabriel Valley Superfund Site, California

Mr. Rosasco developed a numerical allocation model for use in settlement negotiations between the numerous parties involved in this large regional ground-water contamination problem. The allocation model was based on the site database developed by the parties and incorporated environmental monitoring results from various media, information on historic operations and other factors in producing a technically and numerically based allocation of the anticipated 40 to 100 million dollar remedy for regional ground-water contamination. The model was used to develop a "best" allocation method and to test the sensitivity of the results to various factors and to evaluate allocation methods developed by other parties. Project work also included evaluation of the various site factors contributing to the contamination and evaluation of alternative models developed by other parties. Presentation of the model results to the other involved parties at settlement meetings was also part of the project work.

6. Mystery Bridge Road NPL Site ("Brookhurst Subdivision), Evansville, Wyoming

Mr. Rosasco conducted evaluations of the various activities performed by the parties involved with the CERCLA RI/FS of the chlorinated solvent and hydrocarbon contamination beneath the subdivision. Mr. Rosasco also evaluated the sources and extent of the chlorinated solvent and hydrocarbon contamination associated with the industrial properties located to the south of the subdivision. Mr. Rosasco also evaluated the RCRA RFI/CMS activities being conducted for the hydrocarbon contamination associated with the refinery and other facilities located to the west of the subdivision. These evaluations included assessment of the nature and extent of the contamination within the subdivision and associated with each of the industrial properties. His work included evaluation of the fate and transport of chlorinated solvents and aromatic hydrocarbons within soil, soil gas, groundwater and free product along with evaluations of the design, design criteria and purpose and effectiveness of various interim remedial measures. Mr. Rosasco also reviewed various EPA documents regarding the need for not only these investigations but

also for the removal action conducted in 1987 that resulted in installation of the public water supply system as an alternative to use of individual wells within the subdivision. Based upon his evaluations Mr. Rosasco developed a series of spreadsheets and associated graphics depicting twelve different allocation schemes that all resulted in very similar ranges of costs being allocated to the chlorinated solvents plumes/industrial facilities compared to the hydrocarbon plume/refinery. As part of his work Mr. Rosasco also evaluated all of the costs that EPA had recovered from the various industrial companies, the costs incurred by the various industrial companies and the refinery associated with the RI/FS, RFI/CMS or the various interim actions each had performed. Mr. Rosasco evaluated the costs being sought by the industrial companies and the associated activities in terms of their compliance with the National Contingency Plan (NCP). Mr. Rosasco also evaluated the various activities and costs being sought by the refinery as part of the RFI/CMS in terms of their compliance with the NCP.

7. Barter Battery Recycling Site, Denver Colorado

Mr. Rosasco provided expert analysis and expert testimony regarding the consistency of various investigative and remedial actions associated with soil remediation for lead and poly-chlorinated biphenyl contamination with the requirements of the National Contingency Plan (NCP) and the overall necessity and reasonableness of these activities and the resultant costs. Mr. Rosasco also develop an allocation of the respective costs associated with the lead and PCB contamination and remediation activities. Based in part on his evaluations, the Court ruled that the work performed and the associated costs had not been incurred in a manner consistent with the NCP and the case was dismissed on summary judgment.

8. Big Muddy Oil Processing / Powder River Crude Processing Facility, Glenrock, WY.

Mr. Rosasco provided expert assistance during settlement negotiations and in preparation for trial in several cases related to cost recovery under RCRA and allocation of costs between (1) various oil companies that used or sold product to this facility, (2) between the operator of this crude oil processing facility and the oil companies which sold or sent oil to this facility for recovery or processing, (3) between a refinery and the transporter who hauled tank heels to the facility, and (4) between the operator/ oil companies and the operators insurance carriers. Project work included development of various allocation methodologies based on volumetric contributions, the nature and composition of materials sent to the facility, the history of operations at the facility, and the degree of control and degree of care exercised by the oil companies, transporters and operators. Mr. Rosasco also performed site inspections and inspections during remediation, prepared various expert reports, and participated in and made technical presentations during court supervised settlement negotiations.

9. Bartlesville Zinc Refinery and Bartlesville National Priorities List Site, Oklahoma

Mr. Rosasco provided expert analysis and expert testimony related to cost recovery and allocation of response costs related to the investigations and clean-up of on-site (RCRA) and off-site (CERCLA) releases of lead, cadmium and arsenic resulting from 85 years of operations at a zinc refinery. Project work included evaluation of past response costs, evaluation of the necessity and consistency with the National Contingency Plan of the costs associated with past and ongoing response actions, and development and implementation of methodologies for the allocation of both on-site response costs incurred under RCRA and the CWA and off-site response costs incurred under CERCLA. Mr. Rosasco also provided expert testimony (both in deposition and at trial) and expert assistance including assistance in the questioning of opposing experts.

10. Fisher-Calo National Priorities List Site, Kingsbury, Indiana

Mr. Rosasco performed an evaluation of the "divisibility of harm" related to paint manufacturing wastes which had been sent to the solvent recycling operations at this site. His project work included a site inspection, review of historical and RI/FS documents, review of historical aerial photographs, and an evaluation of site conditions, the nature and extent of contamination, and the EPA selected remedial actions. His work included evaluation of the nature and the cause of the harm associated with approximately a dozen areas of contamination and three distinct plumes of ground-water contamination along with an evaluation of the history of operations and releases at the site and the nature of and timing of paint manufacturing waste recycling at the facility. Mr. Rosasco also performed an evaluation of the most likely source of contamination in one of the facility supply wells based on an evaluation of the timing of historical releases at the facility and a comparison of the chemical composition of the historical releases to the contamination found in the well. This resultant opinions were further supported by the results of both analytical and numerical models of ground-water flow and chemical transport performed by me. Mr. Rosasco prepared three separate expert reports covering various aspects of his work, a written summary of his trial testimony and provided expert testimony during two separate depositions in this matter and at trial.

11. Michigan Avenue National Priorities List Site, Kalamazoo, MI

Mr. Rosasco evaluated the various response activities and related costs incurred by the current owner of the site in conjunction with cost recovery actions between the current owner, the previous owner/operator and surrounding industrial facilities related to regional ground-water contamination at this site. His project work include an evaluation of site conditions, the nature and extent of contamination, past and future remedial actions and past response costs. Mr. Rosasco performed an analysis of the necessity and consistency with the NCP of the past response costs, prepared an expert report presenting his opinions and the basis for his opinions and provided deposition testimony.

12. Galley Road Removal Action, Colorado Springs, Colorado

Mr. Rosasco performed evaluations of the nature and extent of wastes and contamination at this former dumping site that lead EPA to require a removal action for this facility. Mr. Rosasco also evaluated the fate and transport properties of these wastes and the associated hazardous substances. His evaluations including determining what hazardous substances were present as a result of disposal of foundry wastes at the site. These were compared to the list of hazardous substances identified by EPA's Action Memorandum to evaluate the need for and causes associated with the removal action. Mr. Rosasco also provided testimony related to the differences between RCRA "hazardous wastes" and CERCLA "hazardous substances."

13. Intalco Aluminum Plant, Ferendale, Washington

Mr. Rosasco provided expert testimony regarding the reasonableness and appropriateness of investigations and remediation of historic industrial waste landfills related at this primary aluminum reduction facility in Ferndale, Washington. Mr. Rosasco also provided testimony regarding the presence of hazardous substances, the applicability of the Washington Model Toxics Control Act to the investigations and remediation, and the costs of the investigations and remediation.

14. Lowry Landfill National Priorities List Site, Denver, Colorado

Mr. Rosasco provided expert testimony and assisted in cost recovery litigation between the industrial users and the owner/operators of this co-disposal (municipal and industrial waste) landfill. His project work was in part related to his prior involvement as the engineer-in-charge of RI/FS work at the facility and included expert assistance in development of anticipated defenses, technical assistance in the development of other expert's opinions, and coordination of other experts. His specific opinions included site conditions, the nature and extent of contamination, the anticipated remedial actions, the response costs incurred, the necessity and consistency of the response costs incurred by both Plaintiffs and Defendants, and the contribution of hazardous constituents by municipal solid wastes and the impacts of solid waste landfill operations on the nature and extent of contamination and the need for, scope and cost of the various remedial actions. Mr. Rosasco prepared an expert report and provided expert testimony during deposition.

15. Phosphogypsum Stack, Tulsa County, Oklahoma

Mr. Rosasco conducted a review and provided testimony related to the consistency of the Remedial Investigation/Feasibility Study and other activities and associated costs relative to the National Contingency Plan for this State superfund site.

16. Noma Outdoor Products Facility, Jackson Tennessee

Mr. Rosasco provided expert analyses and expert testimony as part of a cost recovery action between the current and past owners and operators of this manufacturing facility related to ground-water contamination in the area. His project work included site inspections, ground-water monitoring, assessment of historic and modern operations and releases of hazardous substances at the facility, evaluation of the nature, extent, fate and transport of volatile organic compounds, saturated and unsaturated zone chemical transport modeling, evaluation of the technical quality of prior investigations and evaluations performed by other experts, and development and cost estimation of potential remedial actions. Mr. Rosasco provided expert testimony related to the potential sources of contamination, the estimated timing of historic releases, the reasonableness and degree of certainty of the analyses performed by opposing experts, the necessity and NCP consistency of "response actions" performed by others, and the adequacy of the various pre-acquisition evaluations in terms of the "Innocent Landowner Defense".

17. Retail Petroleum Outlet, Castle Rock, Colorado

Mr. Rosasco performed an evaluation of the nature and extent of ground-water contamination, known and potential sources of the contamination, fate and transport analyses including ground-water modeling, free-product characterization and transport and an assessment of variations in dissolved contaminant occurrences and concentrations over a ten year period along with evaluations of prior, ongoing and potential future remedial actions. Mr. Rosasco also evaluated the results of field investigations performed by opposing experts to identify the "source" of the contamination of a municipal supply well, the "contamination" of various private properties in the area, and their "basis" for eliminating other known releases as a source of the contamination. Mr. Rosasco prepared an expert report and provided expert testimony during deposition and at trial.

18. Buzby Landfill, Vorhees Township, New Jersey

Mr. Rosasco prepared an expert report and provided testimony related to the necessity and NCP consistency of past response costs incurred by the owner of this closed municipal landfill. His project work included an evaluation of site conditions and past response actions, summarization and evaluation of past response costs, and analysis of the consistency of these actions and costs with the requirements of the NCP related to private cost recovery.

19. Pasco Bulk Terminal Facility, Port of Pasco, Washington

Mr. Rosasco evaluated and prepared an expert report related to potential contribution and allocation of remedial costs associated with various bulk fuel storage and terminal operations at the Port of Pasco Washington. His evaluations included examination of the history and practices of the various operations in the area, the history of spills and other releases of oils and fuels as well as various industrial chemicals associated with these

various operations, the nature and occurrences of dissolved and free-phase product, the nature and occurrence of soil contamination and the influence of the hydrogeology of the area and the chemical properties on the chemical distributions and potential remediation activities.

20. Amoco refinery and downtown/north Casper groundwater contamination, Casper, WY.

Mr. Rosasco provided expert testimony regarding the nature and extent of groundwater contamination associated with the petroleum refinery and several other sources of groundwater contamination including a railyard, dry cleaning facility, petroleum tank farm and retail gasoline station, among numerous others in the Casper area. Specifically, Mr. Rosasco evaluated soil, soil gas and groundwater data to identify the known and potential sources of groundwater contamination and the nature and extent of groundwater contamination. Mr. Rosasco also evaluated the appropriateness and efficacy of existing remedial measures and possible additional remedial measures being considered for the refinery. Mr. Rosasco also evaluated the possibility of occurrences of dense non- aqueous phase contamination beneath the refinery.

21. Conoco and Total Refineries, Commerce City, Colorado

Mr. Rosasco provided expert testimony in conjunction with arbitration between the parties regarding costs associated with remediation efforts along Sand Creek. Mr. Rosasco reviewed current and historic documents related to the hydrogeologic conditions at, beneath and up-gradient of Sand Creek, the nature and extent of both dissolved and free-phase occurrences of petroleum hydrocarbons in the soil, sediments, surface water and ground water, the requirements associated with various the regulatory orders and correspondence, and the effectiveness and actual or anticipated costs of various different remediation scenarios as well as the effectiveness of the scenario ultimately implemented. Of key importance were the identification and mitigation of all possible mechanisms potential causing hydrocarbon seeps from the stream bank or sheens on the surface water of the creek. During a subsequent arbitration, Mr. Rosasco provided expert testimony relative to the need for, scope of and costs associated with a proposed subsurface barrier to contain free product and dissolved phase migration into or beneath Sand Creek and proposed realignment of the creek. Mr. Rosasco evaluated costs associated with construction of the new creek both with and without consideration of the previous temporary creek re-location.

Mr. Rosasco also performed site investigations related to assessment of the source of free product occurrences and dissolved phase groundwater contamination beneath the Conoco and Colorado Refining Co. refineries. Based on the results of these evaluations and evaluations performed by other experts, Mr. Rosasco developed an assessment of the origin of the various free product occurrences and the dissolved phase groundwater plume. Mr. Rosasco prepared an allocation of the costs associated with free product recovery and dissolved phase groundwater remediation and presented the results of his investigations, evaluations and cost allocation at the arbitration hearing in this matter.

22. Former General Iron Works Foundry Facility, Denver, Colorado

Mr. Rosasco performed and supervised surface and subsurface investigations of this former foundry facility related to historic disposal of solid and hazardous wastes, PCB releases, leaking underground petroleum storage tanks, historic spills and releases of diesel fuel, and other historic operations in conjunction with cost recovery litigation between the current owner and the historic owner/operator of the facility. Mr. Rosasco also evaluated potential remedial actions and developed cost estimates for these actions as a basis for potential damages. Mr. Rosasco provided expert testimony on his investigations and evaluations during deposition and at various arbitration and settlement conferences.

23. Marshall Landfill National Priorities List Site, Boulder County, Colorado

Mr. Rosasco provided expert testimony during trial related to the nature and extent of contamination and the sources of contamination at this Superfund site along with testimony related to the nature and scope of historic gravel mining, landfill operations and waste disposal at this facility. Project work included performance of subsurface investigations related to the nature and configuration of refuse and other wastes disposed at the site, underlying occurrences of gravel and other materials and ground-water conditions. Related project work included project management and technical evaluations for the Remedial Investigation and Feasibility Study for site and senior consulting and technical review during the Remedial Design and Remedial Action phases at the site.

24. Talache Mine Tailings Site, Atlanta Mining District, Idaho

Mr. Rosasco reviewed information related to site conditions, ownership and operation, causation factors and remediation requirements associated with the 1996 failure of the Talache Mine Tailings pile. Mr. Rosasco provide expert testimony regarding potential cost allocation between the various parties including both past and current owners and operators and the factors affecting the equity of various allocation methods developed by him and by other experts.

25. Oil and Gas Production Unit, Aztec, New Mexico

Mr. Rosasco offered expert opinions regarding the sources of contamination at an oil and gas production site in northwestern New Mexico. Specifically, Mr. Rosasco evaluated soil and groundwater data and performed an onsite inspection during remediation activities. The purpose of his work was to assess the nature and extent of contamination and the relative contributions of contamination from the produced water disposal pit and equipment associated with the oil and gas production facilities as compared to the natural gas dehydrating equipment and associated pit. Mr. Rosasco provided testimony at New Mexico Oil Conservation Division hearings.

26. Retail Gasoline Outlet, Adams County, Colorado

Mr. Rosasco was retained by counsel for both parties involved in a dispute regarding the need for and scope of potential remediation activities to address gasoline contamination in soil and groundwater and associated vapors in a building adjacent to a retail gasoline outlet. Mr. Rosasco review information provided by both parties and evaluated both parties proposals. Mr. Rosasco subsequently met with both parties and provided his findings which resulted in settlement of the dispute.

27. Explosive Manufacturing Facility, Spanish Fork, Utah

Mr. Rosasco provided expert assistance regarding allocation of costs incurred for assessment and remediation of onsite soil and groundwater and offsite groundwater contamination from an explosive manufacturing facility in Utah. Mr. Rosasco reviewed the history of operations and known releases at the Site, the results of prior and ongoing investigations and monitoring activities, prior and ongoing remediation efforts, and associated documents prepared in response to various State orders including a RCRA Corrective Action Order. Mr. Rosasco developed cost allocation models and procedures for demolition of historic facilities, onsite soil contamination, onsite and offsite groundwater contamination and ongoing groundwater remediation activities.

28. Retail Gasoline Outlet and Car Wash, Jefferson County, Colorado

Mr. Rosasco evaluated the investigation and remediation costs incurred by a car wash facility located adjacent to leaking underground storage tanks at an adjacent gasoline station. Mr. Rosasco also evaluated other potential sources of contamination in the area. Mr. Rosasco provided expert testimony at trial regarding the need for and reasonableness of the costs incurred in conjunction with the response actions taken by the car wash facility.

In addition to the projects described above, Mr. Rosasco have also performed several site segregation evaluations of multiple facility Superfund sites to identify potential sources and contributors to regional ground-water contamination and/or to eliminate particular facilities as sources of some or all of the contamination. Project work has included review of regulatory records and the results of historic investigations and sampling activities, aerial photographic interpretation, ground-water monitoring and assessment of hydrogeologic conditions, fate and transport analyses including ground-water flow and transport modeling and geochemical "fingerprinting". Example projects include the South Valley of Albuquerque, New Mexico National Priorities List Site, the Sand Creek Industrial Area NPL Site in Denver, Colorado, and the Southeast Rockford Ground-water Contamination Area, NPL Site, Rockford, Illinois. These projects were performed in conjunction with responses to CERCLA 104E notices or 106 Orders or as part of Remedial Investigations / Feasibility Studies to reduce the scope and cost of future remedial actions for which his clients may be required to pay.

Attachment 2

List of Documents Reviewed and Relied On

DOCUMENTS REVIEWED AND RELIED UPON

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Attachment 3
Summary Exhibits

Table 1 Cadmium, Lead, and Zinc Concentrations
in Ballast Sample Composites

Location	Cadmium	Lead	Zinc	Ratio Zn/Cd
HRR-01	3.3	11000	130	39.4
HRR-02	31	13000	1400	45.2
HRR-03	23	5900	860	37.4
HRR-04	16	14000	880	55.0
HRR-05	120	6400	4500	37.5
HRR-06	13	8200	430	33.1
HRR-08	21	14000	710	33.8
HRR-09*	0.82	250	230	280.5
HRR-10	9.9	1800	330	33.3
HRR-11	1.7	9000	58	34.1
HRR-12	20	17000	680	34.0
HRR-12A*	25	11000	890	35.6
HRR-14	9.6	4200	340	35.4

Notes: • HRR-09 excluded from comparisons in Section 3.0 Summary. HRR-12A is a Duplicate of HRR-12.

Source: Table 3 from NewFields January 29, 2007 Historic Railroads – St. Francois County
Mined Areas report.

Table 2
Soil Sampling Analytical Results (Total Metals and SPLP Metals)
Bonne Terre, MO
November 1, 2013

Sample Number	Depth Interval (feet)	Sample Date	Cadmium	Cadmium SPLP (mg/l)	Lead	Lead SPLP (mg/l)	Zinc	Zinc SPLP (mg/l)
SB-1	0.0 - 0.5	1-Nov-13	52.9	J 0.0006	16,600	0.0927	2,830	0.055
	0.5 - 1.0		60.7	< 0.002	18,100	J 0.0069	3,530	J 0.0069
SB-2	0.0 - 0.5	1-Nov-13	D 24	< 0.002	D 13,900	< 0.04	D 893	J 0.0052
	0.5 - 1.0		D 17.2	< 0.002	D 8,850	< 0.04	D 674	J 0.0067
SB-3	0.0 - 0.5	1-Nov-13	16.7	0.0021	19,500	1.03	777	0.154
	0.5 - 1.0		17.1	0.0037	8,840	2.1	730	0.342
SB-4	0.0 - 0.5	1-Nov-13	D 15.9	< 0.002	D 9,770	J 0.0065	D 718	J 0.0068
	0.5 - 1.0		D 11.5	< 0.002	D 16,600	J 0.023	D 521	J 0.006
Consensus Based PEC, MacDonald, et al. 2000			4.98	NG	128	NG	459	NG
MRBCA Eco-Risk Water Quality Criteria, April 2000			NA	0.0002	NA	0.001	NA	0.059

Notes:

<: Value below reporting limit.

J: Analyte detected below quantitation limits.

NG: No guideline published.

NA: Not applicable.

D: Dilution factor applied.

Highlighted cells exceeded a PEC or MRBCA Eco-Risk Water Quality Criteria.

MRBCA Missouri Risk Based Corrective Action Guidance Document, Table 5-1 Eco-Risk Assessment Chemicals and Target Levels Chemicals of Concern with Protection of Aquatic Life (AQL) - chronic values

SPLP Synthetic Precipitation Leaching Procedure (USEPA Method 1312)

1. Total metals analysis and analysis of leachate by USEPA Method 6010B/7470A
2. The detection limit for lead in SB-2 is 0.04 mg/l which exceeds the MRBCA Eco-Risk Water Quality Criteria of 0.001 mg/l.
3. The detection limit for cadmium was 0.002 mg/l which exceeds the MRBCA Eco-Risk Water Quality Criteria of 0.0002 mg/l.

Table 3
Solids Sampling Analytical Results (Total Metals and SPLP Metals)
Leadwood, MO
November 8, 2013

Sample Number	Depth Interval (feet)	Sample Date						
			Cadmium	Cadmium SPLP (mg/l)	Lead	Lead SPLP (mg/l)	Zinc	Zinc SPLP (mg/l)
SB-5	0.0 - 0.5	8-Nov-13	0.23	< 0.002	43.9	J 0.014	49.7	0.0279
	0.5 - 1.0		0.28	< 0.002	54.5	J 0.014	55.7	0.0267
SB-6	0.0 - 0.5	8-Nov-13	0.29	< 0.002	46.3	J 0.0092	44.2	0.0147
	0.5 - 1.0		0.29	< 0.002	50.5	J 0.018	47	0.0203
Consensus Based PEC, MacDonald, et al. 2000			4.98	NG	128	NG	458	NG
MRBCA Eco-Risk Water Quality Criteria, April 2006			NA	0.0002	NA	0.001	NA	0.059

Notes:

- <: Value below reporting limit.
- J: Analyte detected below quantitation limits.
- NG: No guideline published.
- NA: Not applicable.
- D: Dilution factor applied.

 Highlighted cells exceeded a PEC or MRBCA Eco-Risk Water Quality Criteria.

MRBCA Missouri Risk Based Corrective Action Guidance Document, Table 5-1 Eco-Risk Assessment Chemicals and Target Levels Chemicals of Concern with Protection of Aquatic Life (AQL) - chronic values

SPLP Synthetic Precipitation Leaching Procedure (USEPA Method 1312)

1. Total metals analysis and analysis of leachate by USEPA Method 6010B/7470A
2. The detection limit for cadmium was 0.002 mg/l which exceeds the MRBCA Eco-Risk Water Quality Criteria of 0.0002 mg/l.

Table 4
Solids Sampling Analytical Results (Total Metals and SPLP Metals)
Fredericktown, MO
November 21, 2013

Sample Number	Depth Interval (feet)	Sample Date	Cadmium	Cadmium SPLP (mg/l)	Lead	Lead SPLP (mg/l)	Zinc	Zinc SPLP (mg/l)
SB-7	0.0 - 0.5	21-Nov-13	2.97	< 0.002	1,180	0.0518	349	0.0276
	0.5 - 1.0		3.03	J 0.0003	1,380	0.0635	440	0.0389
SB-8	0.0 - 0.5	21-Nov-13	3.91	< 0.002	1,270	0.0838	230	0.0214
	0.5 - 1.0		2.05	< 0.002	1,290	0.104	153	0.0226
SB-9	0.0 - 0.5	21-Nov-13	0.38	< 0.002	770	0.072	60.9	0.0143
	0.5 - 1.0		0.4	< 0.002	1,140	0.0752	61.9	0.0138
Consensus Based PEC, MacDonald, et al. 2000			4.98	NG	128	NG	459	NG
MRBCA Eco-Risk Water Quality Criteria, April 2006			NA	0.0002	NA	0.001	NA	0.059

Notes:

<: Value below reporting limit.

J: Analyte detected below quantitation limits.

NG: No guideline published.

NA: Not applicable.

D: Dilution factor applied.

 Highlighted cells exceeded a PEC or MRBCA Eco-Risk Water Quality Criteria.

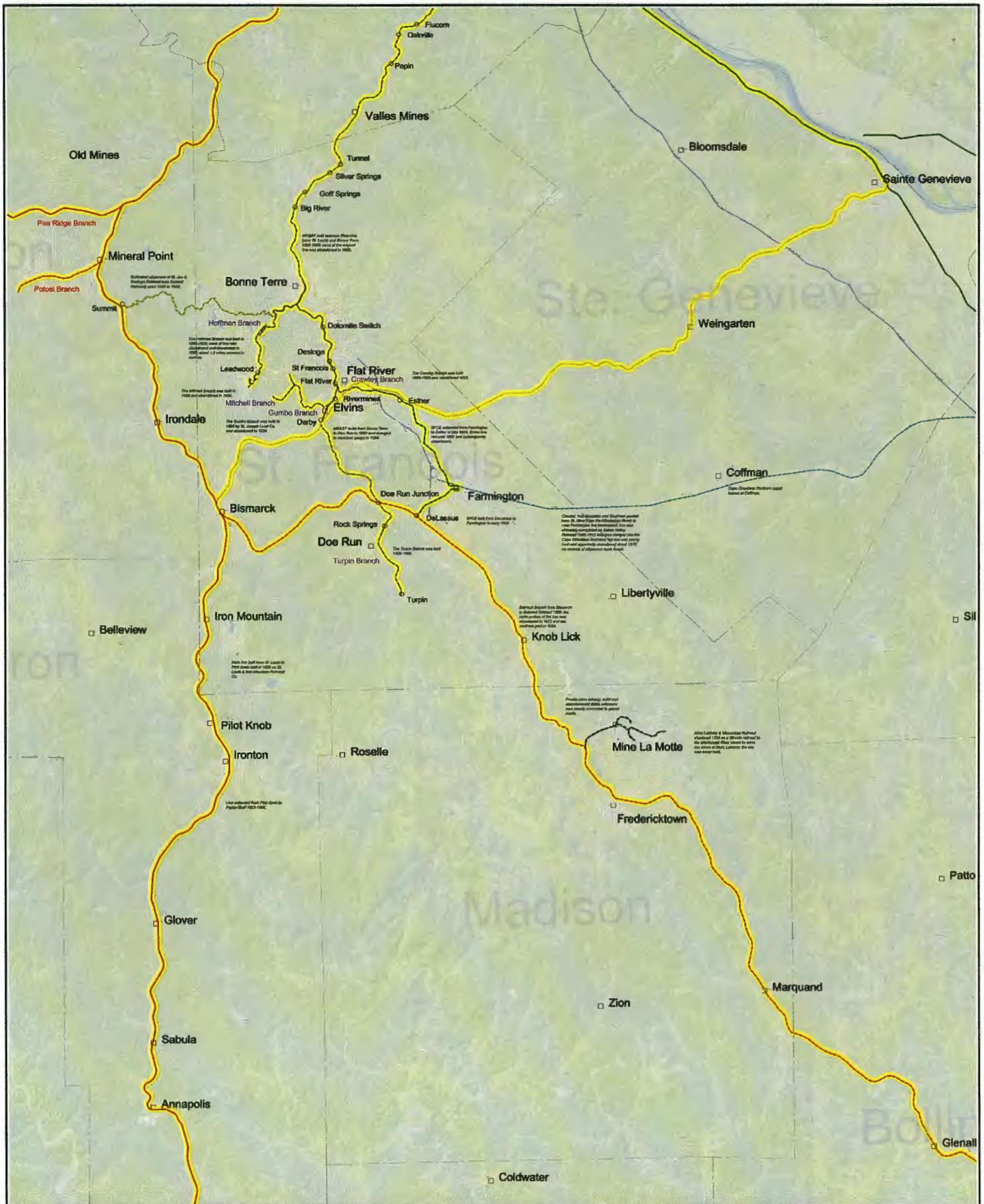
MRBCA Missouri Risk Based Corrective Action Guidance Document, Table 5-1 Eco-Risk Assessment Chemicals and Target Levels Chemicals of Concern with Protection of Aquatic Life (AQL) - chronic values

SPLP Synthetic Precipitation Leaching Procedure (USEPA Method 1312)

1. Total metals analysis and analysis of leachate by USEPA Method 6010B/7470A

2. Arsenic, mercury, selenium and silver were not detected using SPLP analysis.

3. The detection limit for cadmium was 0.002 mg/l which exceeds the MRBCA Eco-Risk Water Quality Criteria of 0.0002 mg/l.



Scale
1 in = 7000 feet

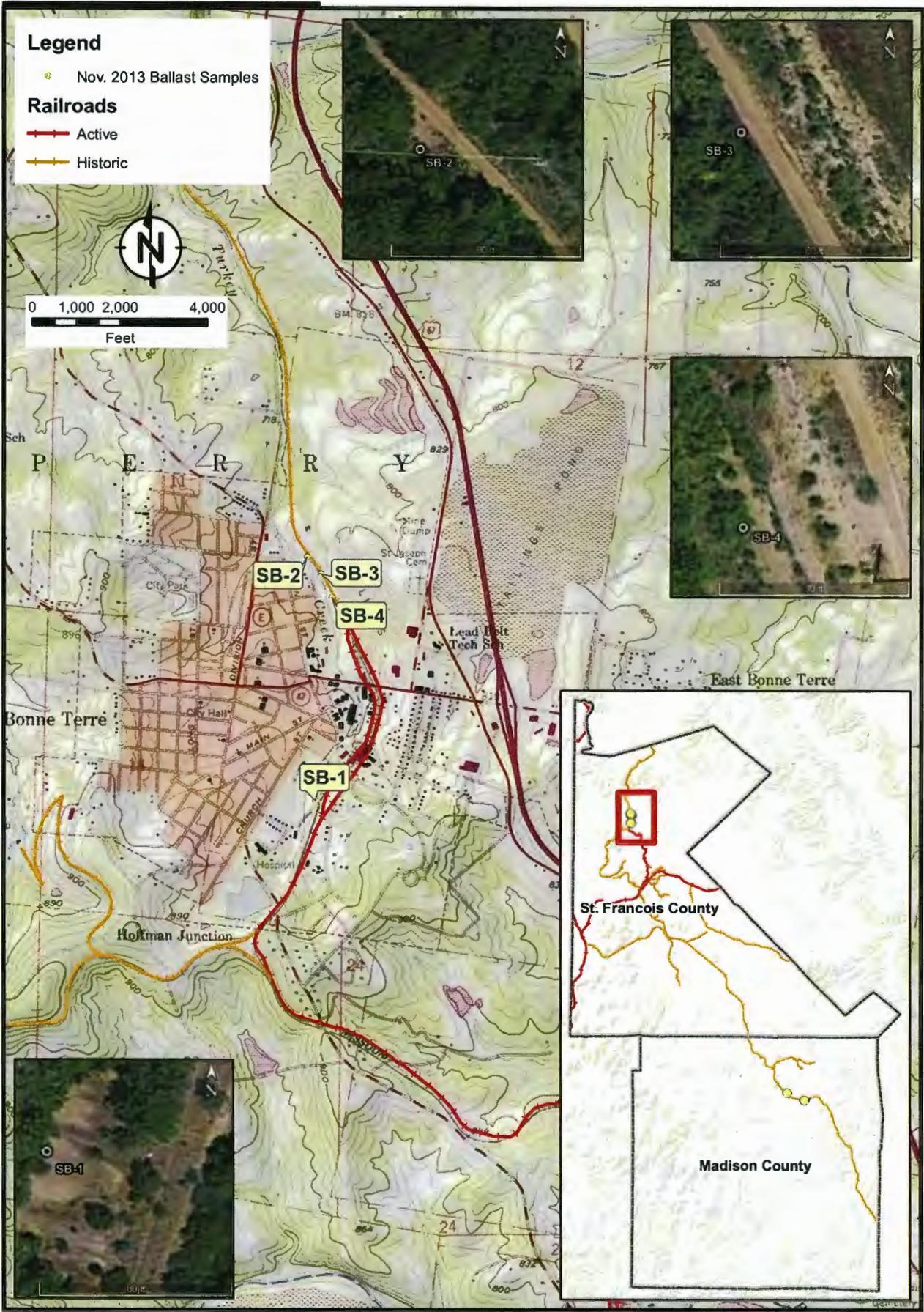
- Railroads** (Dashed where known abandoned)
- Cape Girardeau Northern (a)
 - Iron Mountain (b)
 - Mississippi River & Bonne Terre (c)
 - St. Francois County Electric (d)
 - St. Joe & Desloge Railroad (e)
 - St. Louis, Iron Mountain & Southern (f)
 - Burlington Northern (U.P. trackage rights.)
 - Private
 - Rail routes operated by Union Pacific and predecessors

(a) Cape Girardeau Northern formed Feb., 1913 as consolidation of Saline Valley Railroad (about 1894) and Chester, Perryville & Ste. Genevieve (previously Cape Girardeau & Chester Railroad (about 1902 to 1910), Chester, Perryville & Ste. Genevieve & Farmington Railroad Co. (1894-1900)), exact alignment unknown; discontinued 1937.
 (b) Iron Mountain Railroad, May, 1900 to Jan., 1921; reorganized Jan. 6, 1921 as Missouri-Iron Railroad Co.; Missouri-Pacific Railroad purchased controlling interest in 1929 and formally merged company Nov., 1976; merger of Missouri Pacific into Union Pacific Railroad approved 1992.

(c) Mississippi River & Bonne Terre Railway Co. granted charter May, 1898, became part of Missouri-Iron Railroad Co. Jan., 1920; the company was officially dissolved Sep. 25, 1948.
 (d) St. Francois County Electric Railroad Co. organized Mar., 1901; reorganized as St. Francois County Electric Railway Co. Dec. 1903; entered receivership Nov. 6, 1909 and reorganized under same name Oct., 1910; purchased by Mississippi River & Bonne Terre Railway Co. in 1912, but operated under same name until 1937; abandoned Nov., 1967.
 (e) St. Joe & Desloge Railroad. Private railroad opened Jan.

18, 1880 by St. Joseph Lead Co. and Desloge Lead Co. Never incorporated separately. Also known as Summit Railroad and St. Joseph Railway. Operated until IRR&ST opened. No maps found; very speculative alignment shown.
 (f) St. Louis, Iron Mountain & Southern formed May, 1874 as consolidation of St. Louis & Iron Mountain Railroad Co. (formed about 1858), the Cairo, Arkansas & Texas Rail Road Co. (1853 to Sep 22, 1866) and the Cairo & Fulton-Missouri Pacific Railway gained control of the line in 1902 or 1931; formal merger took place in May, 1917 when the company was reorganized as the Missouri Pacific Railroad.

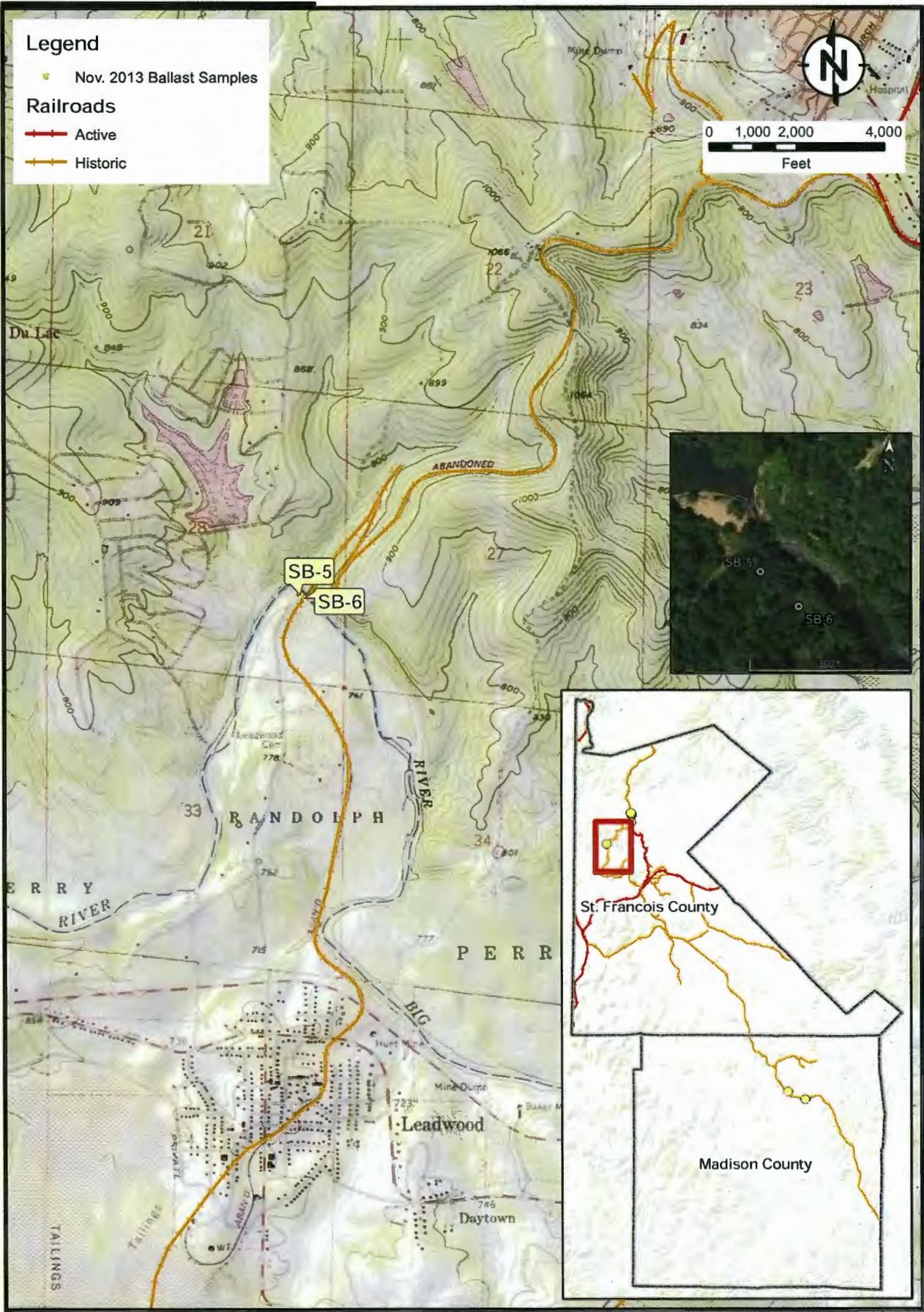
Figure 1
Locations of Existing and Historic Rail Lines
 St. Francois and Madison Counties, Missouri
 EMSI Engineering Management Support, Inc.



RAIL LINE BALLAST SAMPLE LOCATIONS NEAR BONNE TERRE, MO
ST. FRANCOIS COUNTY, MISSOURI

FIGURE
2

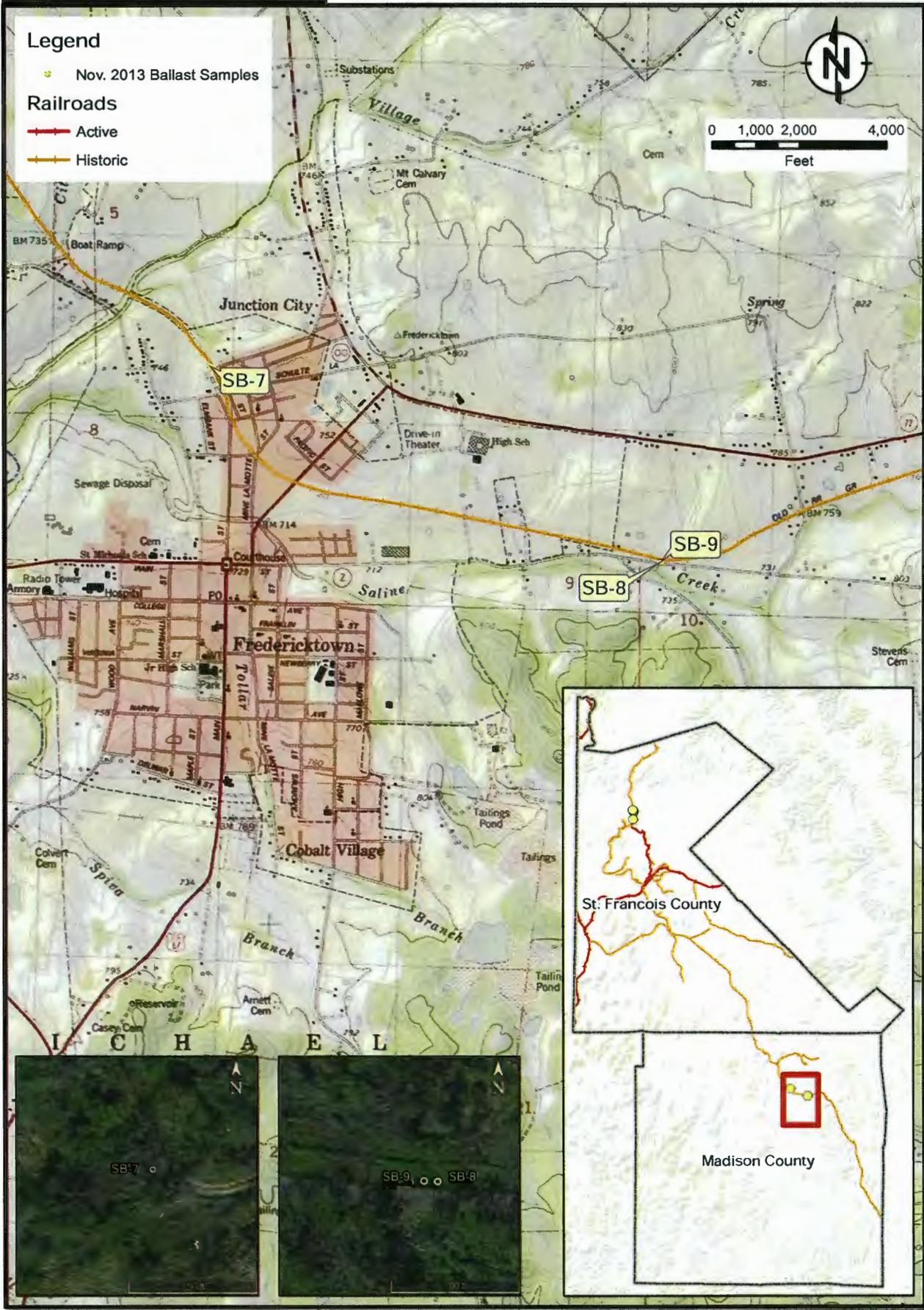
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RAIL LINE BALLAST SAMPLE LOCATIONS NEAR LEADWOOD, MO
ST. FRANCOIS COUNTY, MISSOURI

FIGURE
3

DATE: 1/14/2014
DRAFTED BY: CCS

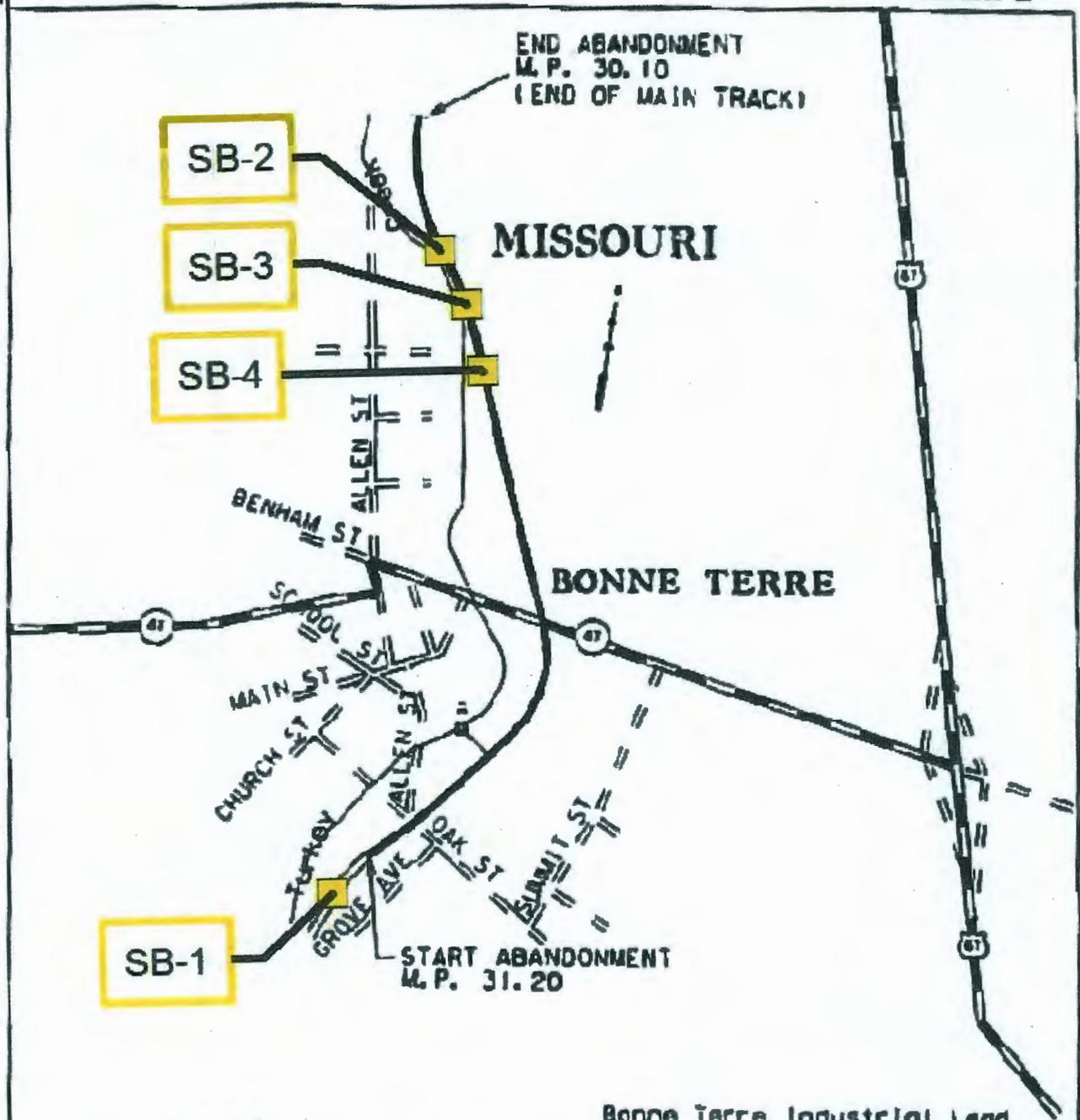


RAIL LINE BALLAST SAMPLE LOCATIONS NEAR FREDERICKTOWN, MO
MADISON COUNTY, MISSOURI

FIGURE
4

DATE: 1/13/2014
DRAFTED BY: CCS

EXHIBIT H



LEGEND

-  UPRR LINES TO BE ABANDONED
-  OTHER UPRR LINES
-  OTHER RAILROADS
-  50+ YEAR OLD STRUCTURES
-  PRINCIPAL HIGHWAYS
-  OTHER ROADS

Bonne Terre Industrial Lead
M.P. 31.1 TO M.P. 31.2
BONNE TERRE INDUSTRIAL LEAD - TOTAL OF 1.1 MILES
IN ST. FRANCIS COUNTY, MISSOURI

**UNION PACIFIC RAILROAD CO.
BONNE TERRE INDUSTRIAL LEAD
INCL. 50+ YEAR OLD STRUCTURES**

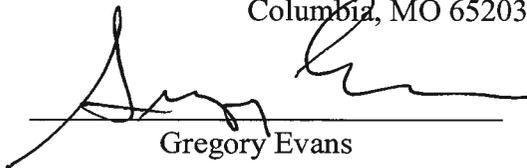


06027
July 18, 2000

CERTIFICATE OF SERVICE

I hereby certify that I have served the foregoing Declaration of Gregory Evans in Support of Petition to Reopen by regular mail this 24th day of November, 2014, upon all parties of record on the STB's service list.

Type	Party Name	Address
Party of Record	Charles W. Saylor	1416 Dodge Street Room 830 Omaha, NE 68179-0001
Party of Record	Mack H. Shumate Jr.	101 North Wacker Drive Room 1920 Chicago, IL60606-1718
Non-Party	Governor of Missouri	State Capitol Building Jefferson City, MO 65101-1556
Non-Party	Missouri Department of Natural Resources	P.O. Box 176 Jefferson City, MO 65102
Non-Party	Missouri Department of Transportation	105 West Capitol Avenue P.O. Box 270 Jefferson City, MO 65102
Non-Party	Missouri Public Service Commission	200 Madison Street Jefferson City, MO 65102-0360
Non-Party	Missouri State Clearinghouse	P.O. Box 809 Jefferson City, MO 65102
Non-Party	U.S. Army Corps of Engineers	601 E. 12th Street Room 736 Kansas City, MO 64106-2896
Non-Party	U.S. Department of Transportation Federal Motor Carrier Safety Administration	1200 New Jersey Avenue, S.E. Washington DC 20590
Non-Party	U.S. Environmental Protection Agency, Region 7	901 North 5th Street Kansas City, KS 66101
Non-Party	U.S. Fish And Wildlife Service	101 Park De Ville Drive, #A Columbia, MO 65203-0007



Gregory Evans