

State	County	Route	lower range limit	upper range limit	Line
Pennsylvania	Allegheny	1	14	25	PC
Pennsylvania	Allegheny	2	8	15	LC
Pennsylvania	Allegheny	3	8	15	PT
Pennsylvania	Allegheny	4	0	10	ML, JP
Pennsylvania	Armstrong	1	8	15	LC
Pennsylvania	Beaver	1	14	25	PC
Pennsylvania	Berks	1	6	10	
Pennsylvania	Berks	2	0	5	
Pennsylvania	Berks	3	4	7	
Pennsylvania	Blair	1	14	25	PT
Pennsylvania	Butler	1	8	15	LC
Pennsylvania	Cambria	1	14	25	PT
Pennsylvania	Chester	1	4	7	
Pennsylvania	Cumberland	1	8	16	EP
Pennsylvania	Dauphin	1	14	25	PT
Pennsylvania	Dauphin	2	8	16	EP
Pennsylvania	Dauphin	3	6	10	HP
Pennsylvania	Delaware	1	1	4	Conrail
Pennsylvania	Huntingdon	1	14	25	PT
Pennsylvania	Indiana	1	8	15	LC
Pennsylvania	Indiana	2	8	15	PT
Pennsylvania	Indiana	3	14	25	PT
Pennsylvania	Juniata	1	14	25	PT
Pennsylvania	Lancaster	1	8	16	PD
Pennsylvania	Lawrence	1	14	25	PC
Pennsylvania	Lebanon	1	6	10	HP
Pennsylvania	Lehigh	1	0	5	
Pennsylvania	Mifflin	1	14	25	PT
Pennsylvania	Montgomery	1	4	7	
Pennsylvania	Northampton	1	0	5	
Pennsylvania	Perry	1	14	25	PT
Pennsylvania	Philadelphia	1	4	7	HP
Pennsylvania	Philadelphia	2	1	4	CSX
Pennsylvania	Philadelphia	3	2	5	Conrail
Pennsylvania	Westmoreland	1	8	15	PT
Pennsylvania	Westmoreland	2	8	15	LC
Pennsylvania	Westmoreland	3	14	25	PT
Pennsylvania	York	1	8	16	EP, PD

**Allegheny County**

**Norfolk Southern**

**US DOT Bakken Crude Oil Order Information**

**As received from Norfolk Southern June 2014**

<b>State</b>	<b>County</b>	<b>Route</b>	<b>lower range limit</b>	<b>upper range limit</b>	<b>Line</b>
Pennsylvania	Allegheny	1	14	25	PC
Pennsylvania	Allegheny	2	8	15	LC
Pennsylvania	Allegheny	3	8	15	PT
Pennsylvania	Allegheny	4	0	10	ML, JP

Armstrong County

Norfolk Southern

US DOT Bakken Crude Oil Order Information

As received from Norfolk Southern June 2014

State	County	Route	lower range limit	upper range limit	Line
Pennsylvania	Armstrong	1	8	15	LC

Beaver County

Norfolk Southern

US DOT Bakken Crude Oil Order Information

As received from Norfolk Southern June 2014

State	County	Route	lower range limit	upper range limit	Line
Pennsylvania	Beaver	1	14	25	PC

**Berks County**

**Norfolk Southern**

**US DOT Bakken Crude Oil Order Information**

**As received from Norfolk Southern June 2014**

<b>State</b>	<b>County</b>	<b>Route</b>	<b>lower range limit</b>	<b>upper range limit</b>	<b>Line</b>
Pennsylvania	Berks	1	6	10	
Pennsylvania	Berks	2	0	5	
Pennsylvania	Berks	3	4	7	

Blair County

Norfolk Southern

US DOT Bakken Crude Oil Order Information

As received from Norfolk Southern June 2014

State	County	Route	lower range limit	upper range limit	Line
Pennsylvania	Blair	1	14	25	PT

Butler County

Norfolk Southern

US DOT Bakken Crude Oil Order Information

As received from Norfolk Southern June 2014

State	County	Route	lower range limit	upper range limit	Line
Pennsylvania	Butler	1	8	15	LC

Cambria County

Norfolk Southern

**US DOT Bakken Crude Oil Order Information**

As received from Norfolk Southern June 2014

State	County	Route	lower range limit	upper range limit	Line
Pennsylvania	Cambria	1	14	25	PT

Chester County

Norfolk Southern

US DOT Bakken Crude Oil Order Information

As received from Norfolk Southern June 2014

State	County	Route	lower range limit	upper range limit	Line
Pennsylvania	Chester	1	4	7	

Dauphin County

Norfolk Southern

US DOT Bakken Crude Oil Order Information

As received from Norfolk Southern June 2014

State	County	Route	lower range limit	upper range limit	Line
Pennsylvania	Dauphin	1	14	25	PT
Pennsylvania	Dauphin	2	8	16	EP
Pennsylvania	Dauphin	3	6	10	HP

Delaware County

Norfolk Southern

**US DOT Bakken Crude Oil Order Information**

As received from Norfolk Southern June 2014

State	County	Route	lower range limit	upper range limit	Line
Pennsylvania	Delaware	1	1	4	Conrail

Huntingdon County

Norfolk Southern

US DOT Bakken Crude Oil Order Information

As received from Norfolk Southern June 2014

State	County	Route	lower range limit	upper range limit	Line
Pennsylvania	Huntingdon	1	14	25	PT

Indiana County

Norfolk Southern

US DOT Bakken Crude Oil Order Information

As received from Norfolk Southern June 2014

State	County	Route	lower range limit	upper range limit	Line
Pennsylvania	Indiana	1	8	15	LC
Pennsylvania	Indiana	2	8	15	PT
Pennsylvania	Indiana	3	14	25	PT

Juniata County

Norfolk Southern

US DOT Bakken Crude Oil Order Information

As received from Norfolk Southern June 2014

State	County	Route	lower range limit	upper range limit	Line
Pennsylvania	Juniata	1	14	25	PT

Lancaster County

Norfolk Southern

US DOT Bakken Crude Oil Order Information

As received from Norfolk Southern June 2014

State	County	Route	lower range limit	upper range limit	Line
Pennsylvania	Lancaster	1	8	16	PD

Lawrence County

Norfolk Southern

US DOT Bakken Crude Oil Order Information

As received from Norfolk Southern June 2014

State	County	Route	lower range limit	upper range limit	Line
Pennsylvania	Lawrence	1	14	25	PC

Lebanon County

Norfolk Southern

US DOT Bakken Crude Oil Order Information

As received from Norfolk Southern June 2014

State	County	Route	lower range limit	upper range limit	Line
Pennsylvania	Lebanon	1	6	10	HP

Lehigh County

Norfolk Southern

US DOT Bakken Crude Oil Order Information

As received from Norfolk Southern June 2014

State	County	Route	lower range limit	upper range limit	Line
Pennsylvania	Lehigh	1	0	5	

Mifflin County

Norfolk Southern

US DOT Bakken Crude Oil Order Information

As received from Norfolk Southern June 2014

State	County	Route	lower range limit	upper range limit	Line
Pennsylvania	Mifflin	1	14	25	PT

Montgomery County

Norfolk Southern

US DOT Bakken Crude Oil Order Information

As received from Norfolk Southern June 2014

State	County	Route	lower range limit	upper range limit	Line
Pennsylvania	Montgomery	1	4	7	

Northampton County

Norfolk Southern

US DOT Bakken Crude Oil Order Information

As received from Norfolk Southern June 2014

State	County	Route	lower range limit	upper range limit	Line
Pennsylvania	Northampton	1	0	5	

Perry County

Norfolk Southern

US DOT Bakken Crude Oil Order Information

As received from Norfolk Southern June 2014

State	County	Route	lower range limit	upper range limit	Line
Pennsylvania	Perry	1	14	25	PT

Philadelphia County

Norfolk Southern

US DOT Bakken Crude Oil Order Information

As received from Norfolk Southern June 2014

State	County	Route	lower range limit	upper range limit	Line
Pennsylvania	Philadelphia	1	4	7	HP
Pennsylvania	Philadelphia	2	1	4	CSX
Pennsylvania	Philadelphia	3	2	5	Conrail

Westmoreland County

Norfolk Southern

US DOT Bakken Crude Oil Order Information

As received from Norfolk Southern June 2014

State	County	Route	lower range limit	upper range limit	Line
Pennsylvania	Westmoreland	1	8	15	PT
Pennsylvania	Westmoreland	2	8	15	LC
Pennsylvania	Westmoreland	3	14	25	PT

York County

Norfolk Southern

US DOT Bakken Crude Oil Order Information

As received from Norfolk Southern June 2014

State	County	Route	lower range limit	upper range limit	Line
Pennsylvania	York	1	8	16	EP, PD

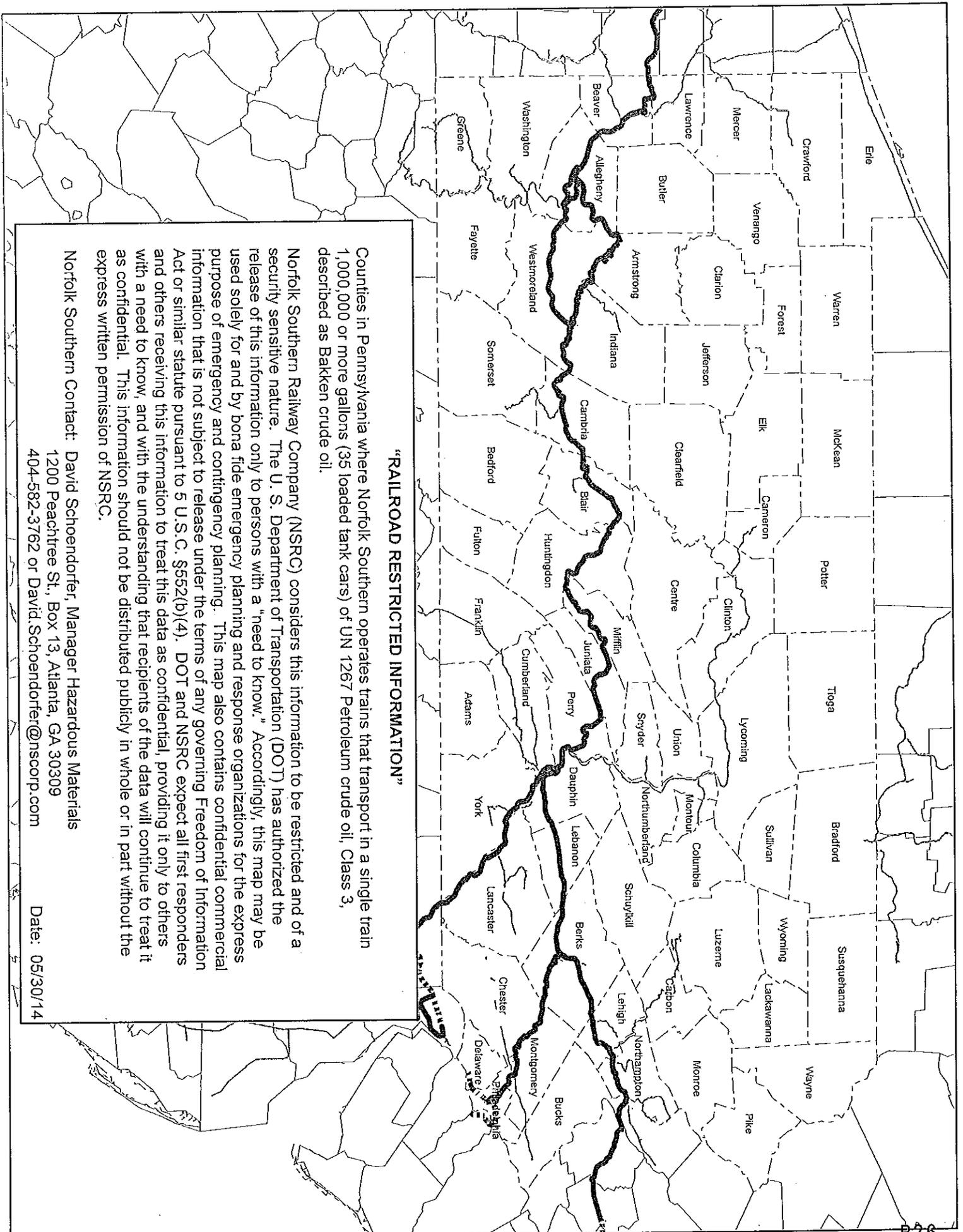
**"RAILROAD RESTRICTED INFORMATION"**

Counties in Pennsylvania where Norfolk Southern operates trains that transport in a single train 1,000,000 or more gallons (35 loaded tank cars) of UN 1267 Petroleum crude oil, Class 3, described as Bakken crude oil.

Norfolk Southern Railway Company (NSRC) considers this information to be restricted and of a security sensitive nature. The U. S. Department of Transportation (DOT) has authorized the release of this information only to persons with a "need to know." Accordingly, this map may be used solely for and by bona fide emergency planning and response organizations for the express purpose of emergency and contingency planning. This map also contains confidential commercial information that is not subject to release under the terms of any governing Freedom of Information Act or similar statute pursuant to 5 U.S.C. §552(b)(4). DOT and NSRC expect all first responders and others receiving this information to treat this data as confidential, providing it only to others with a need to know, and with the understanding that recipients of the data will continue to treat it as confidential. This information should not be distributed publicly in whole or in part without the express written permission of NSRC.

Norfolk Southern Contact: David Schoendorf, Manager Hazardous Materials  
1200 Peachtree St., Box 13, Atlanta, GA 30309  
404-582-3762 or David.Schoendorf@nscorp.com

Date: 05/30/14



Allegheny County, PA

**"RAILROAD RESTRICTED INFORMATION"**

DOT Emergency Order  
Petroleum Crude Oil  
Railroad Carriers  
Docket No.  
DOT-OST-2014-0057

Locations where Norfolk Southern operates trains that transport in a single train 1,000,000 or more gallons (55 iscedoz tank cars) of UN 1267 Petroleum crude oil, Class 2, described as Slicken crude oil.

Norfolk Southern Railway Company (NSRC) certifies that this information is of a confidential nature. The U. S. Department of Transportation (DOT) has authorized the release of this information only to persons with a "need to know." Accordingly, this map may be used solely for and by bona fide emergency planning and response organizations for the express purpose of emergency and contingency planning. This map also contains confidential commercial information that is not subject to release under the Freedom of Information Act or similar statute pursuant to 5 U.S.C. §552(b)(4). DOT and NSRC expect all third responders and others receiving this information to treat this data as confidential, providing it only to others with a need to know, and with the understanding that recipients of the data will continue to treat it as confidential. This information should not be submitted publicly in whole or in part without the express written permission of NSRC.

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David.Schenckler@nscorp.com

**Legend**

- Mileposts
- Slicken Crude Oil Route
- Other NS Rail
- Interstates
- Highways
- Cities
- Counties

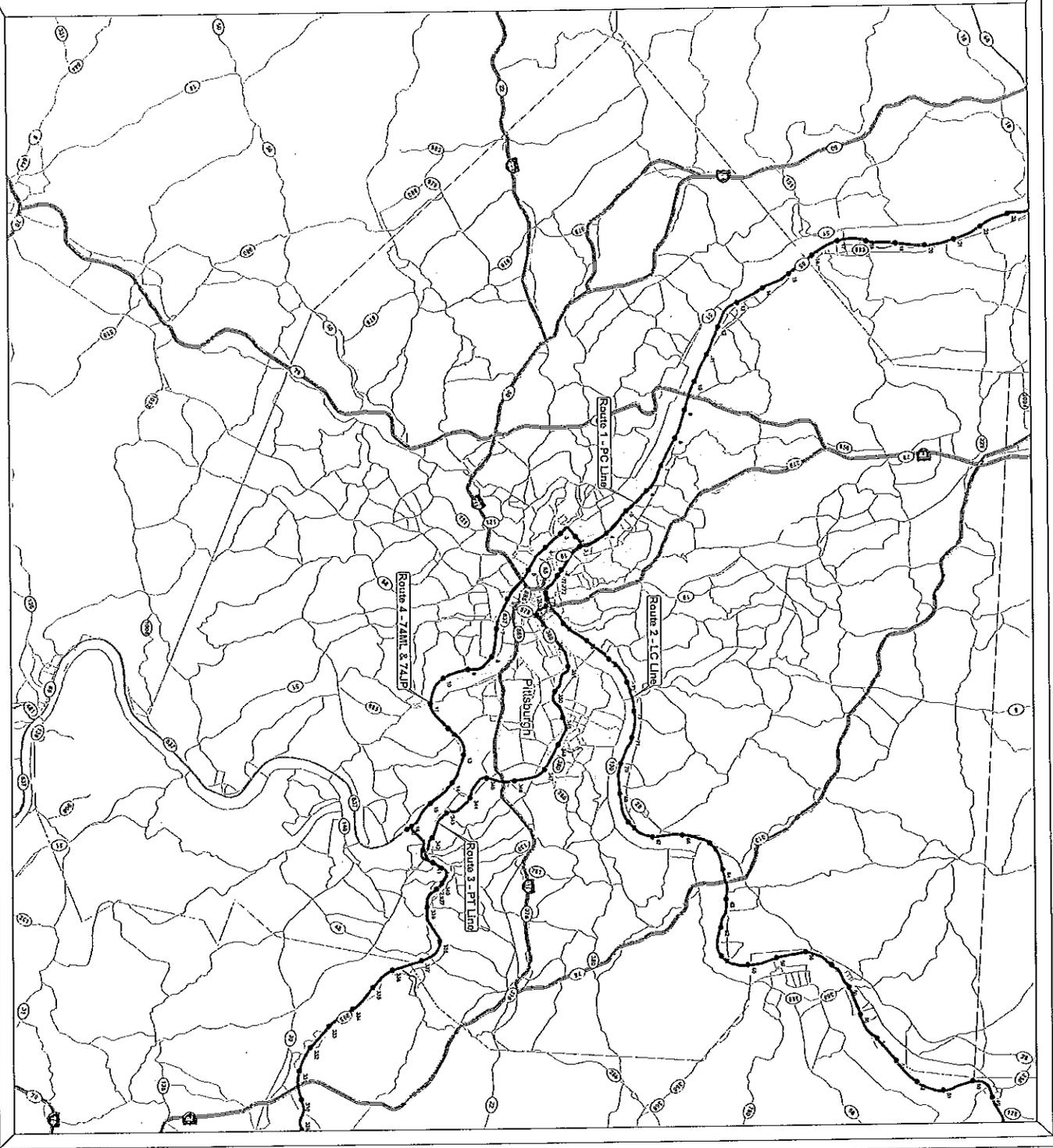
Scale: 1:50,000

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Armstrong County, PA

**"RAIL ROAD RESTRICTED INFORMATION"**

DOT Emergency Order  
Petroleum Grade Oil  
Railroad Carriers  
Doctel No.  
DOT-OST-2014-0087

Locations where Norfolk Southern operates trains that transport in a single train 1,000,000 or more gallons (35 loaded tank cars) of UN 1267 Petroleum grade Oil, Class A, described as Bakken crude oil.

Norfolk Southern Railway Company (NSRC) considers this highly sensitive information of a security sensitive nature. The U. S. Department of Transportation (DOT) has authorized the release of this information only to persons with a "need to know." Accordingly, this map may be used solely for and by bona fide emergency planning and response organizations for the express purpose of emergency and contingency planning. This map also contains confidential commercial information that is not subject to release under the Information Act or similar statute pursuant to 5 U.S.C. §552(b)(4). DOT and NSRC expect all first responders and others receiving this information to treat the data as confidential, providing it only to others with a need to know, and with the understanding that recipients of the data will continue to treat it as confidential. This information should not be disseminated publicly in whole or in part without the express written permission of NSRC.

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**Legend**

- Mileposts
- Bakken Crude Oil Route
- Other NS Rail
- Interstates
- Highways
- Cities
- Counties

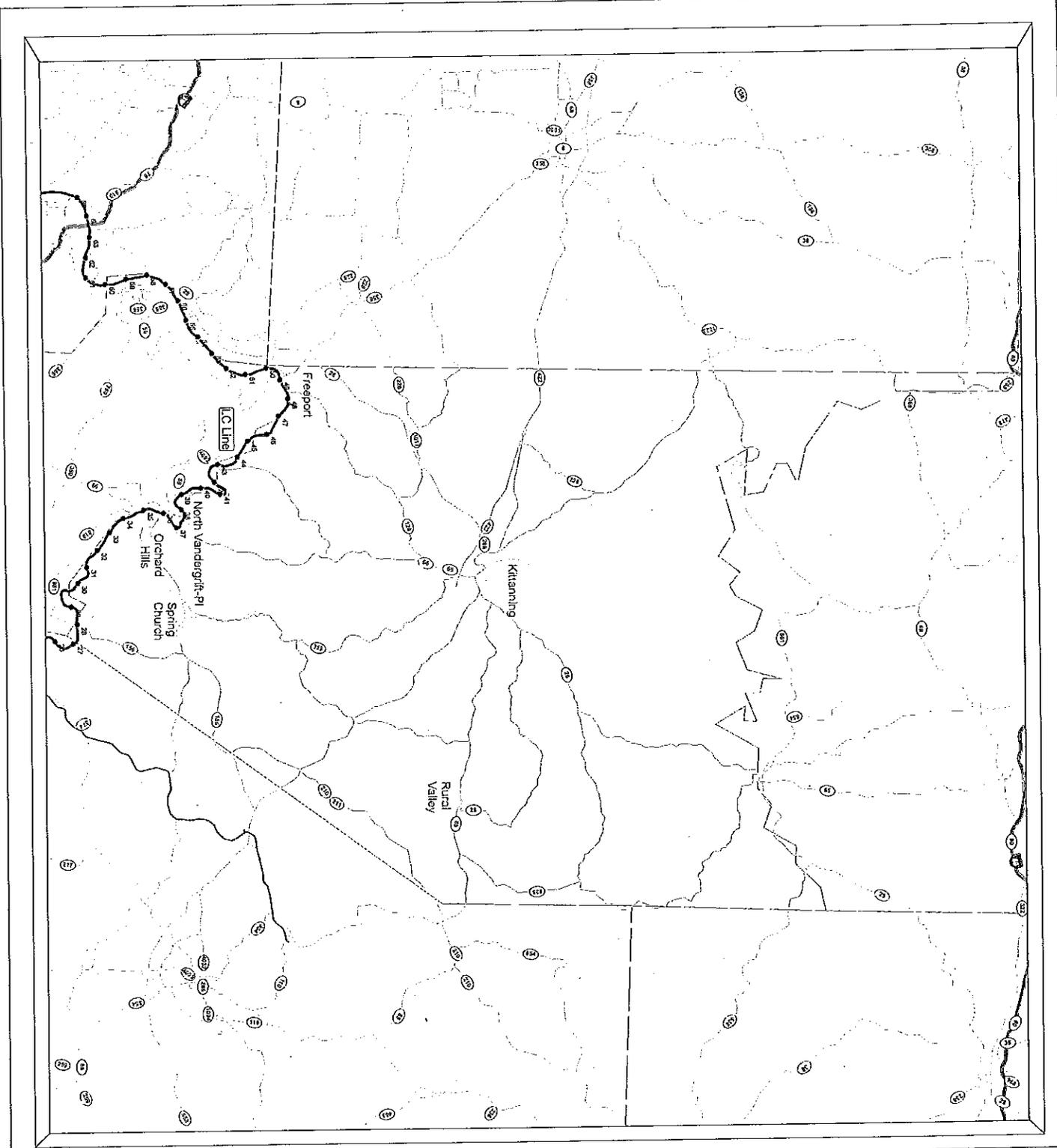
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**"RAILROAD RESTRICTED INFORMATION"**

DOT Emergency Order  
 Petroleum Cude Oil  
 Railroad Carriers  
 Order No.  
 DOT-OST-2014-0067

Locations where Norfolk Southern  
 operates 1,000,000 or more gallons  
 of 15S heated tank cars of UN 1267  
 Petroleum cude oil, Class 3,  
 described as tanked cude oil.

Norfolk Southern Railway Company (NSRC) considers the information to be restricted and of a security sensitive nature. The U. S. Department of Transportation (DOT) has authorized the release of this information only to persons with a "need to know." Accordingly, this map may be used solely for and by some emergency planning and response purposes. This map is not for general release or emergency planning. This map also contains confidential commercial information that is not subject to release under the terms of any governing Freedom of Information Act or similar statute pursuant to 5 U.S.C. §552(b)(4). DOT and NSRC expect all first responders and other receiving this information to treat this data as confidential, providing it only to others with a need to know, and with the understanding that the information will continue to treat it as confidential. The information should not be distributed publicly in whole or in part without the express written permission of NSRC.

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 David.Schneider@nsofcorp.com

**Legend**

- Mileposts
- Broken Cude Oil Route
- Other NS Rail
- Interstates
- Highways
- Cities
- Counties

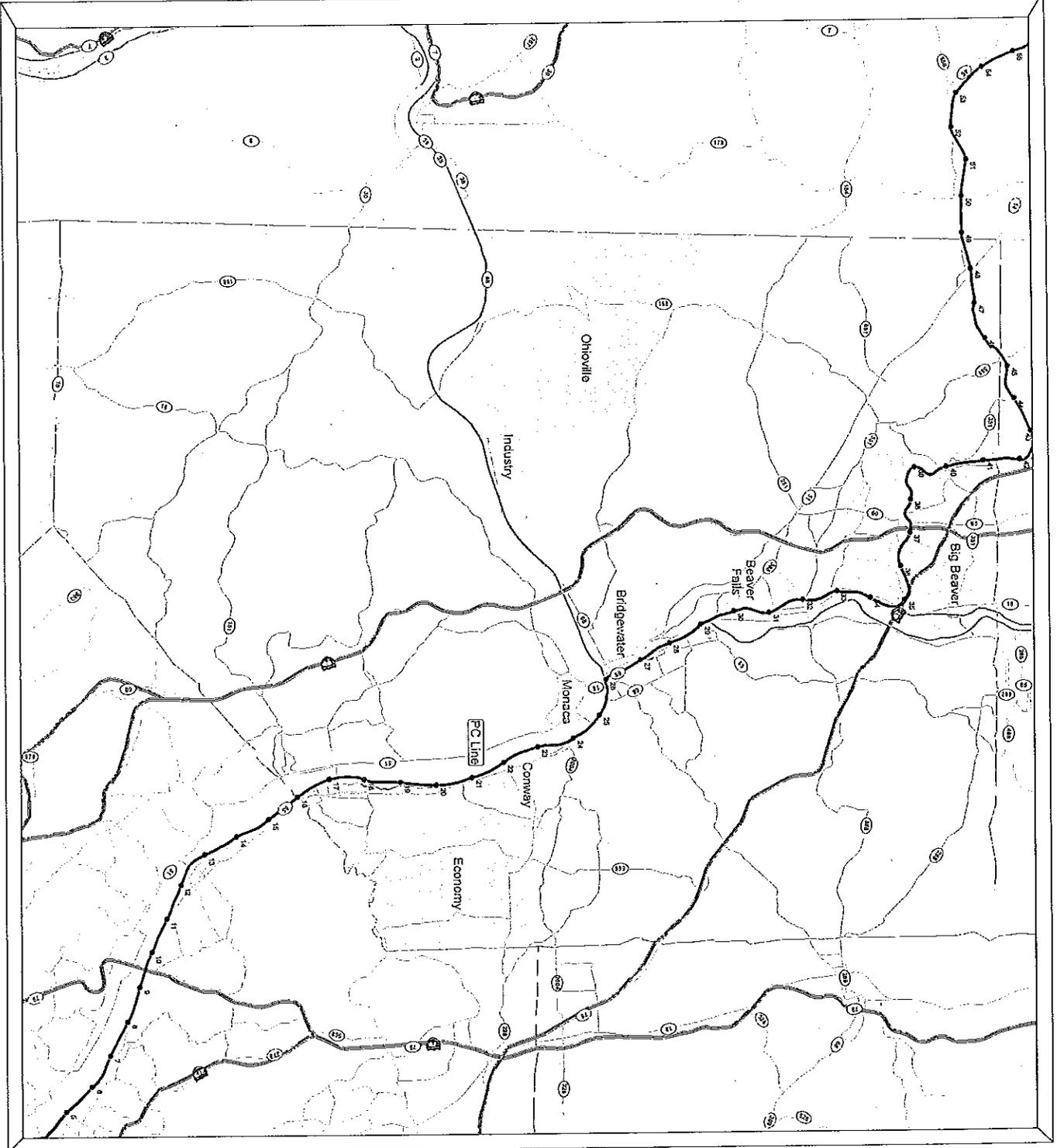
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Berks County, PA

**"RAILROAD RESTRICTED INFORMATION"**

DOT Emergency Order  
Petroleum Crude Oil  
Railroad Carriers  
Docket No.  
DOT-OSR-2014-0067

Locations where Norfolk Southern operates trains that transport in a single train 1,000,000 or more gallons of petroleum crude oil, Class 3, described as Bakken crude oil.

Norfolk Southern Railway Company (NSRC) considers the information to be restricted and of a security sensitive nature. The U. S. Department of Transportation (DOT) has authorized the release of this information only to persons with a "need to know." Accordingly, this map may be used solely for and by bona fide emergency planning and response organizations for the express purpose of emergency and contingency planning. This information is not to be disseminated commercially, information that is not subject to release under the terms of any governing Freedom of Information Act or similar statute pursuant to 5 U.S.C. §552(b)(4). DOT and NSRC expect all first responders and others receiving this information to treat this data as confidential, providing it only to others with a need to know, and with the understanding that recipients of the data will continue to treat it as confidential. The information should not be distributed publicly in whole or in part without the express written permission of NSRC.

Norfolk Southern Contact  
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1200 Peachtree St. Box 13,  
Atlanta, GA 30309  
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**Legend**

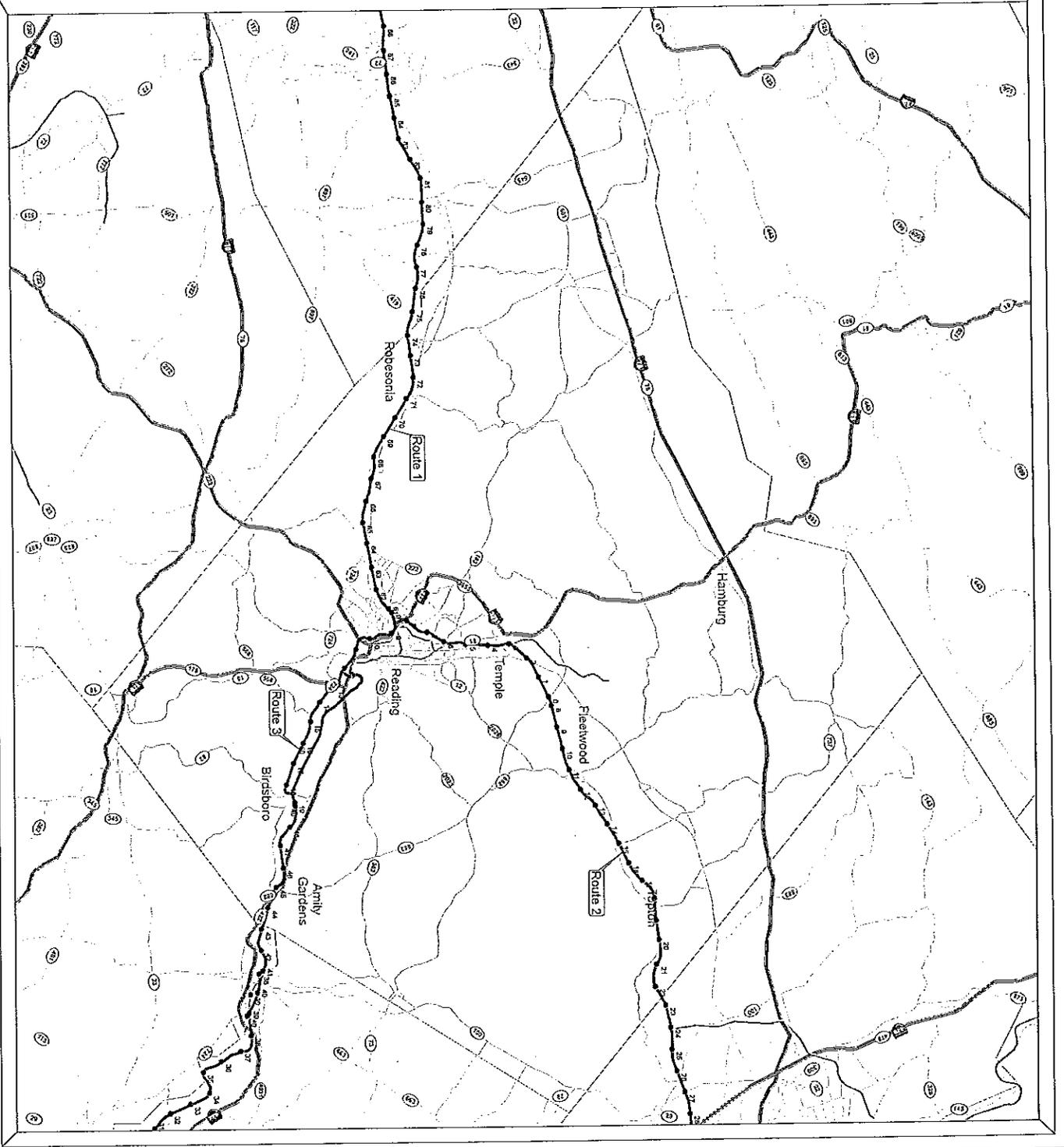
- Mississippi
- Bakken Crude Oil Route
- Class 3 Rail
- Interstate
- Highway
- Class
- Counties

DATE: 05/20/14



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Blair County, PA

**"RAILROAD RESTRICTED INFORMATION"**

DOT Emergency Order  
Petroleum Crude Oil  
Railroad Carriers  
Blair County, PA  
DOT-ES-1501-43067

Locations where Norfolk Southern operates trains that transport in a single train 1,000,000 or more gallons (35 loaded tank cars) of UN 1287 Petroleum crude oil, Class 2, described as Bakken crude oil.

Norfolk Southern Railway Company (NSRC) considers the information to be restricted and of a security sensitive nature. The U. S. Department of Transportation (DOT) has authorized the release of this information only to persons who are authorized to receive this information and who may be used solely for and by bona fide emergency planning and response organizations for the express purpose of emergency and contingency planning. This map also contains confidential commercial information that is not subject to release under the terms of any governing Freedom of Information Act or similar statute pursuant to 5 U.S.C. §552(b)(4). DOT and NSRC expect all rail responders and other receiving this confidential information to agree to this confidentiality, providing it only to others with a need to know, and with the understanding that recipients of the data will continue to treat it as confidential. This information should not be distributed publicly in whole or in part without the express written permission of NSRC.

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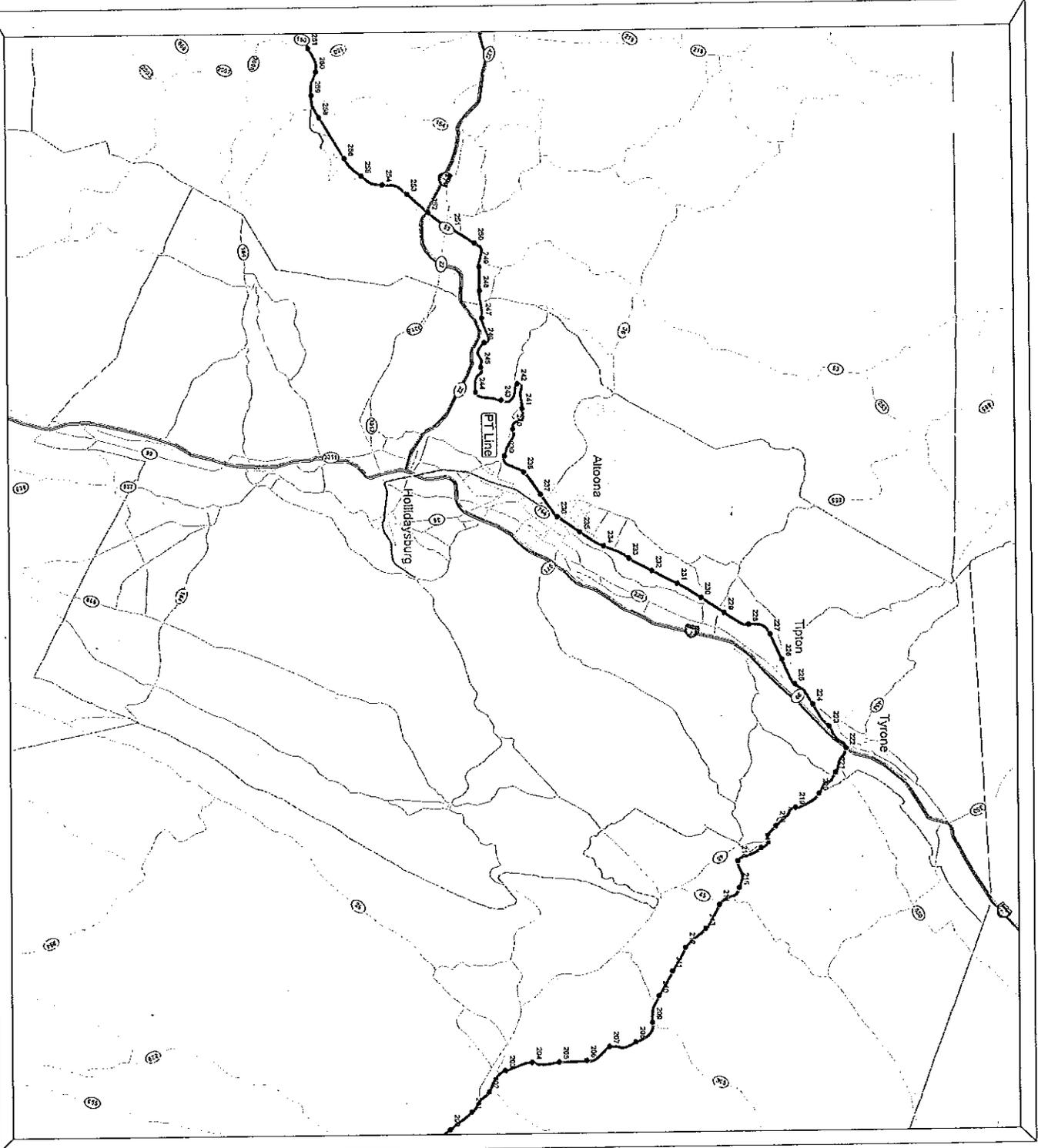
**Legend**

- Mileposts
- Bakken Crude Oil Route
- Other NS Rail
- Interstates
- Highways
- Cities
- Counties



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Butler County, PA

**"RAILROAD RESTRICTED INFORMATION"**

DOT Emergency Order  
Petroleum Crude Oil  
Railroad Crude Oil  
Docket No.  
DOT-OEST-2014-0067

Locations where Norfolk Southern operates trains that transport in a single train 1,000,000 or more gallons (35 loaded tank cars) of UN 1267 Petroleum crude oil, Class 3, described as Bakken crude oil.

Norfolk Southern Railway Company (NSRC) considers this information to be restricted and of a security sensitive nature. The U.S. Department of Transportation (DOT) has announced the restriction of this information to those with a "need to know." Accordingly, this map may be used solely for and by bona fide emergency planning and response organizations for the express purpose of emergency and contingency planning. This map also contains confidential commercial information that is not subject to release under the terms of any similar statute pursuant to 5 U.S.C. 552(b)(5). DOT and NSRC expect all first information to treat this data as confidential, providing it only to others with a need to know, and with the understanding that recipients of the data will continue to treat it as confidential. This information should not be distributed publicly in whole or in part without the express written permission of NSRC.

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**Legend**

- Allpoints
- Bakken Crude Oil Route
- Other NS Rail
- Interstates
- Highways
- Cities
- Counties

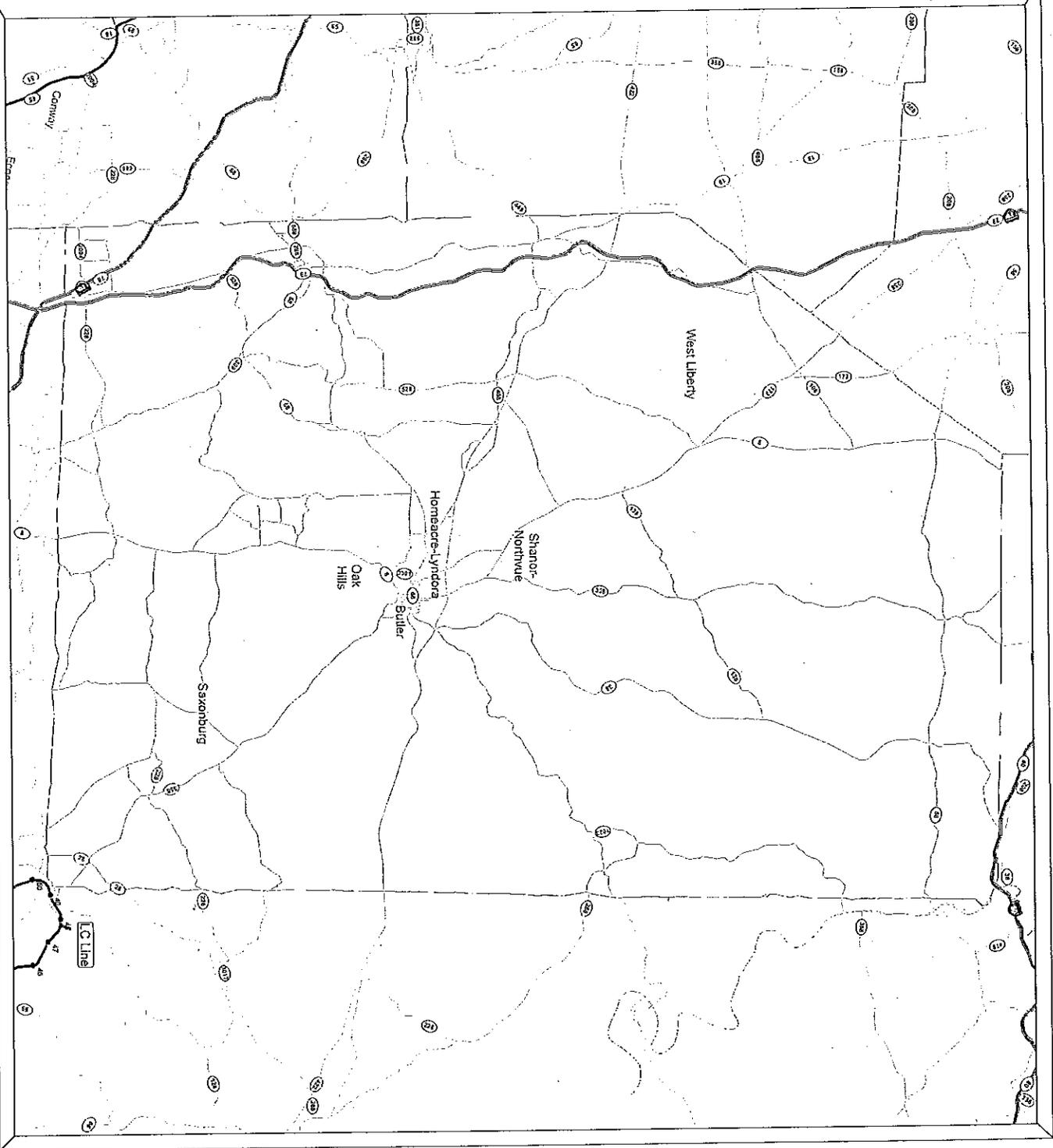
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Cambria County, PA

**"RAILROAD RESTRICTED INFORMATION"**

DOT Emergency Order  
Petroleum Crude Oil  
Railroad Carrier  
Docket No.  
DOT-CST-2014-0067

Locations where a Norfolk Southern  
operates trains that transport in a  
single train 1,000,000 or more gallons  
(33 loaded tank cars) of Oil 1201  
described as Bakken crude oil.

Norfolk Southern Railway Company  
(NSRC) considers this information to be  
restricted and of a security sensitive  
nature. The U. S. Department of  
Transportation (DOT) has authorized the  
release of this information only to persons  
with a "need to know." Accordingly, this  
map may be used solely for and by bona  
fide emergency planning and response  
organizations for the express purpose of  
emergency and contingency planning.

This map also contains information that is not subject  
to release under the terms of any  
governing Freedom of Information Act or  
similar statute pursuant to 5 U.S.C.  
§552(b)(4). DOT and NSRC expect all  
federal responders and other receiving this  
information to treat this data as  
confidential, providing it only to others  
with a need to know, and with the  
understanding that recipients of the data  
will continue to treat it as confidential.  
This information is for informational purposes  
only and is not to be used in part without the  
express written permission of NSRC.

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**Legend**

- Mileposts
- Bakken Crude Oil Route
- Other NS Rail
- Interstates
- Highways
- Cities
- Counties

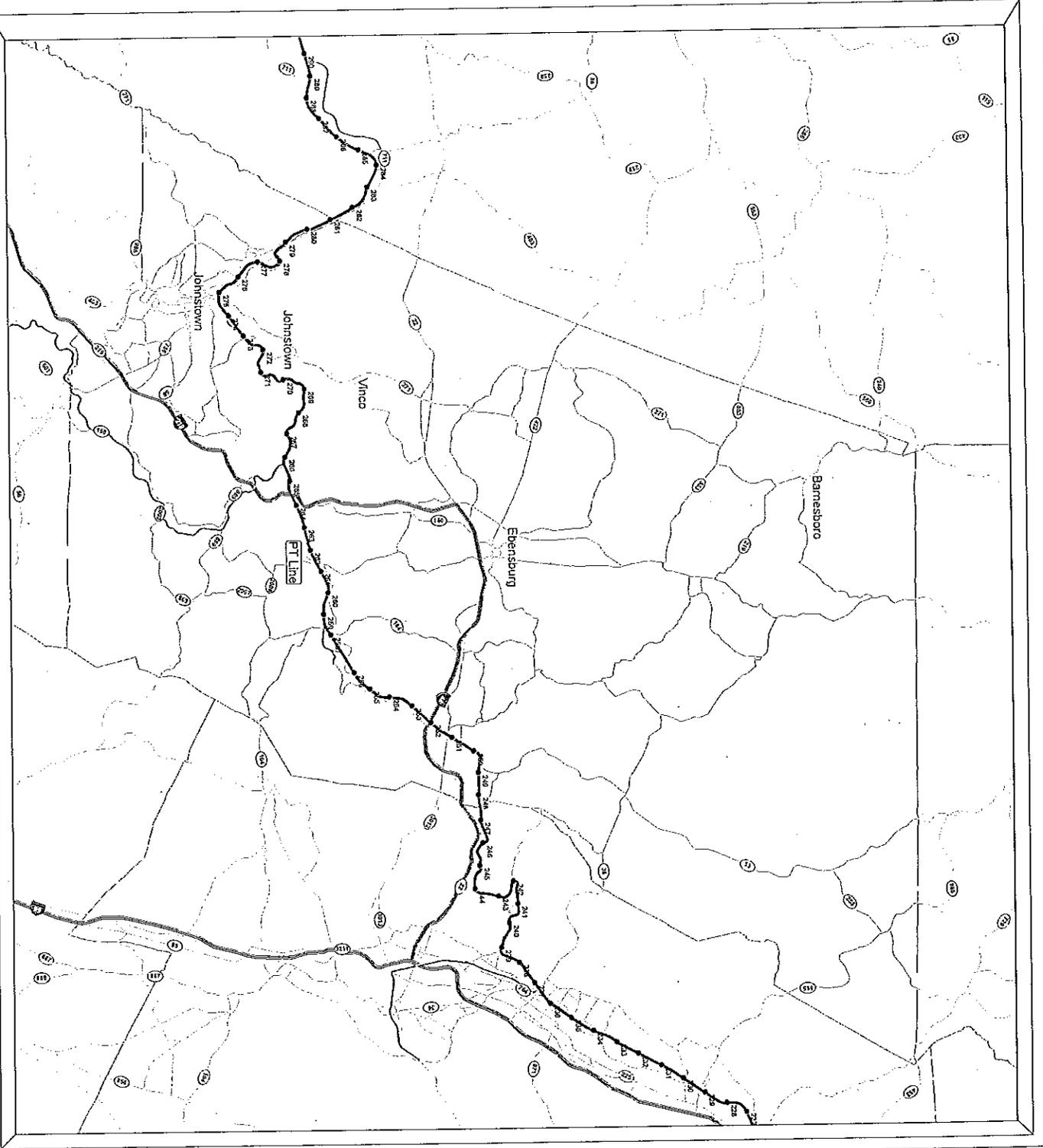
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Chester County, PA

**"RAILROAD RESTRICTED INFORMATION"**

DOT Emergency Order  
Petroleum Crude Oil  
Railroad Carriers  
Docket No.  
DOT-OST-2014-0067

Locations where Norfolk Southern operates trains that transport in a spillable liquid form (e.g., Bakken crude oil, Class 3, Petroleum crude oil, Class 3, described as Bakken crude oil.

Norfolk Southern Railway Company (NSRC) considers this information to be restricted and of a security sensitive nature. The U. S. Department of Transportation (DOT) has authorized the release of this information only to persons with a "need to know." Accordingly, this map may be used solely for and by bona fide emergency planning and response organizations for the express purpose of emergency response and incident investigation. This map also contains confidential information that is not subject to release under the terms of any governing Freedom of Information Act or similar statute pursuant to 5 U.S.C. §552(b)(4). DOT and NSRC expect all first responders and others receiving this information to treat the data as confidential, providing it only to others with a need to know, and with the understanding that recipients of the data will remain bound by the same restrictions. This information should not be distributed publicly in whole or in part without the express written permission of NSRC.

Norfolk Southern Contact:  
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1200 Peachtree St., Box 13,  
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404-582-3763 or  
David.Schneider@nsrcorp.com

**Legend**

- Mileposts
- Bakken Crude Oil Route
- Other NS Rail
- Interstate
- Highway
- Class
- Counties

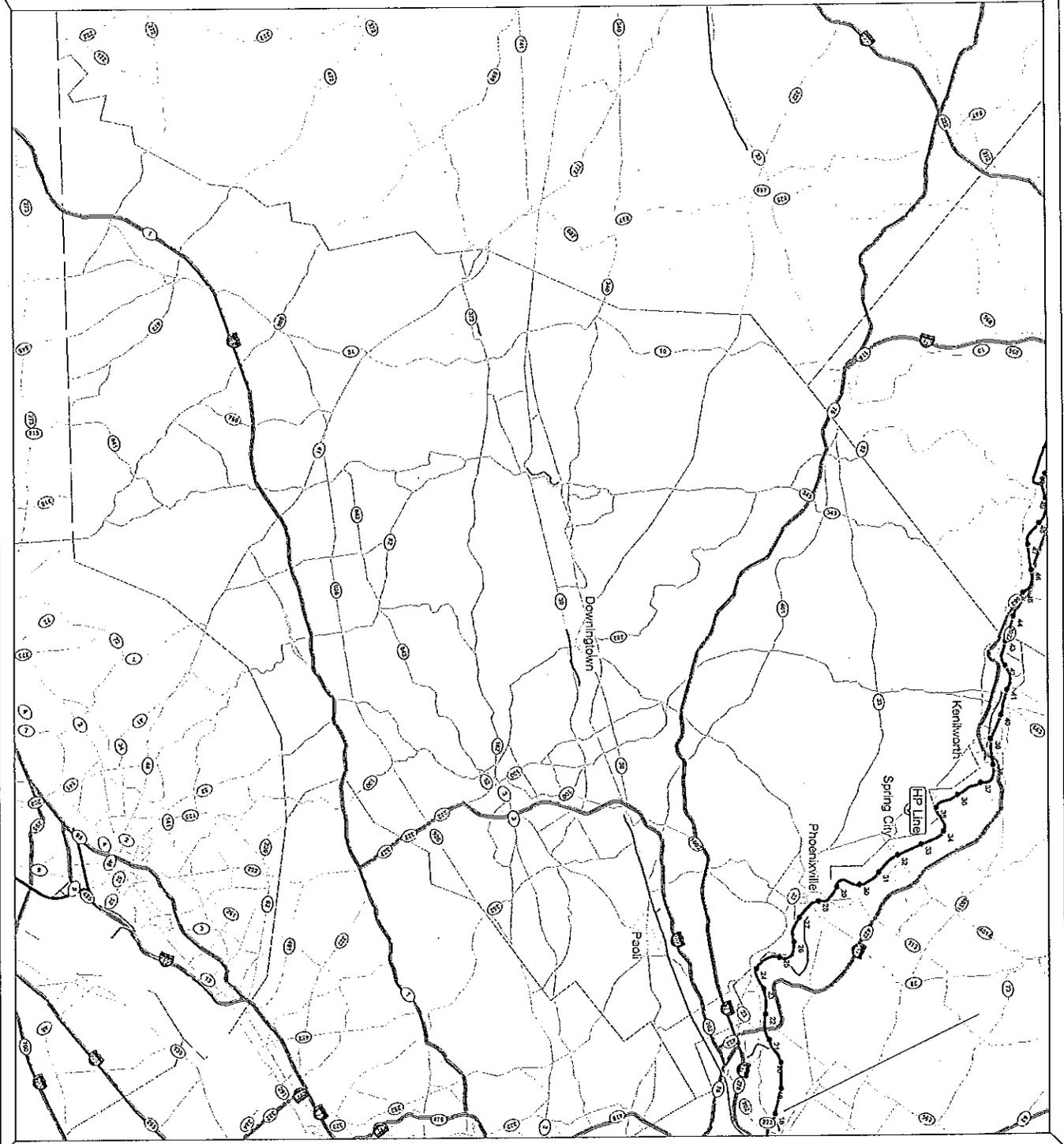
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**"RAILROAD RESTRICTED INFORMATION"**

DOT Emergency Order  
 Petroleum Crude Oil  
 Railroad Carriers  
 Docket No.  
 DOT-OET-2014-0067

Locations where Norfolk Southern operates trains that transport in a single train 100,000,000 or more gallons (4 million barrels) of petroleum crude oil, Class 3 described as Bakken crude oil.

Norfolk Southern Railway Company (NSRC) considers the information to be restricted and of a security sensitive nature. The U. S. Department of Transportation (DOT) has authorized the release of this information only to persons with a "need to know." Accordingly, this map may be used solely for and by bona fide emergency planning and response organizations for the express purpose of emergency and contingency planning. Commercial information that is not subject to release under the terms of any governing Freedom of Information Act or similar statute pursuant to 5 U.S.C. §552(b)(4). DOT and NSRC expect all first responders and others receiving this information to treat this data as confidential, providing it only to others with a need to know, and with the understanding that recipients of the data will continue to treat it as confidential. This information is not to be disseminated publicly in whole or in part without the express written permission of NSRC.

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**Legend**

- Mileposts
- Bakken Crude Oil Routes
- Other NS Rail
- Interstates
- Highways
- Cities
- Counties

Scale: 1:50,000



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Dauphin County, PA

**"RAILROAD RESTRICTED INFORMATION"**

DOT Emergency Order  
Petroleum Grade Oil  
Railroad Carriers  
District No.  
DOT-OST-2014-0067

Locations where Norfolk Southern operates trains that transport in a single train 1,000,000 or more gallons (35 loaded tank cars) of UN 1267 Petroleum grade oil, Class 3, described as Bakken crude oil.

Norfolk Southern Railway Company (NSRC) considers this information to be restricted and of a security sensitive nature. The DOT's Department of Transportation (DOT) requires the release of this information only to someone with a "need to know." Accordingly, this map may be used solely for and by bona fide emergency planning and response organizations for the express purpose of emergency and contingency planning. This map also contains confidential commercial information that is not subject to release under the terms of any governing Freedom of Information Act or 55 USC 552(b)(4). DOT and NSRC expect all first responders and others receiving this information to treat this data as confidential, providing it only to others with a need to know, and with the understanding that recipients of the data will continue to treat it as confidential. This information should not be distributed publicly in whole or in part without the express written permission of NSRC.

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Hazardous Materials  
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404-582-2782 or  
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**Legend**

- Mileposts
- Bakken Crude Oil Route
- Other NS Rail
- Interstates
- Highways
- Cities
- Counties

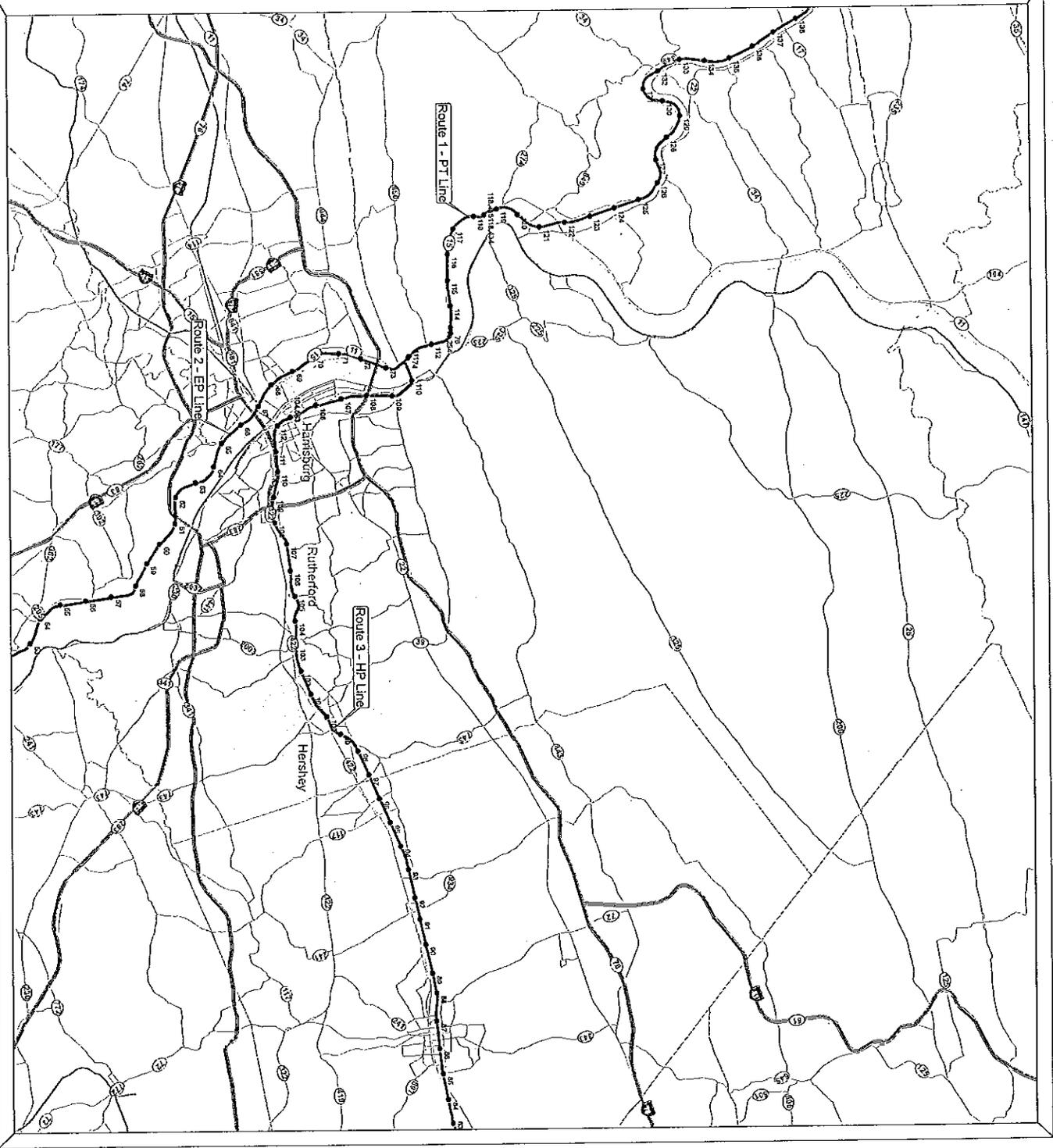
Date: 06/09/14

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Delaware County, PA

**"RAILROAD RESTRICTED INFORMATION"**

DOT Emergency Order  
 Petroleum Cude Oil  
 Restricted Areas  
 District No.  
 DOT-CST-2014-0067

Locations where Norfolk Southern operates trains that transport in a single train 1,000,000 or more gallons (35 loaded tank cars) of UN 1267 Petroleum crude oil, Class 3, described as Bakken crude oil.

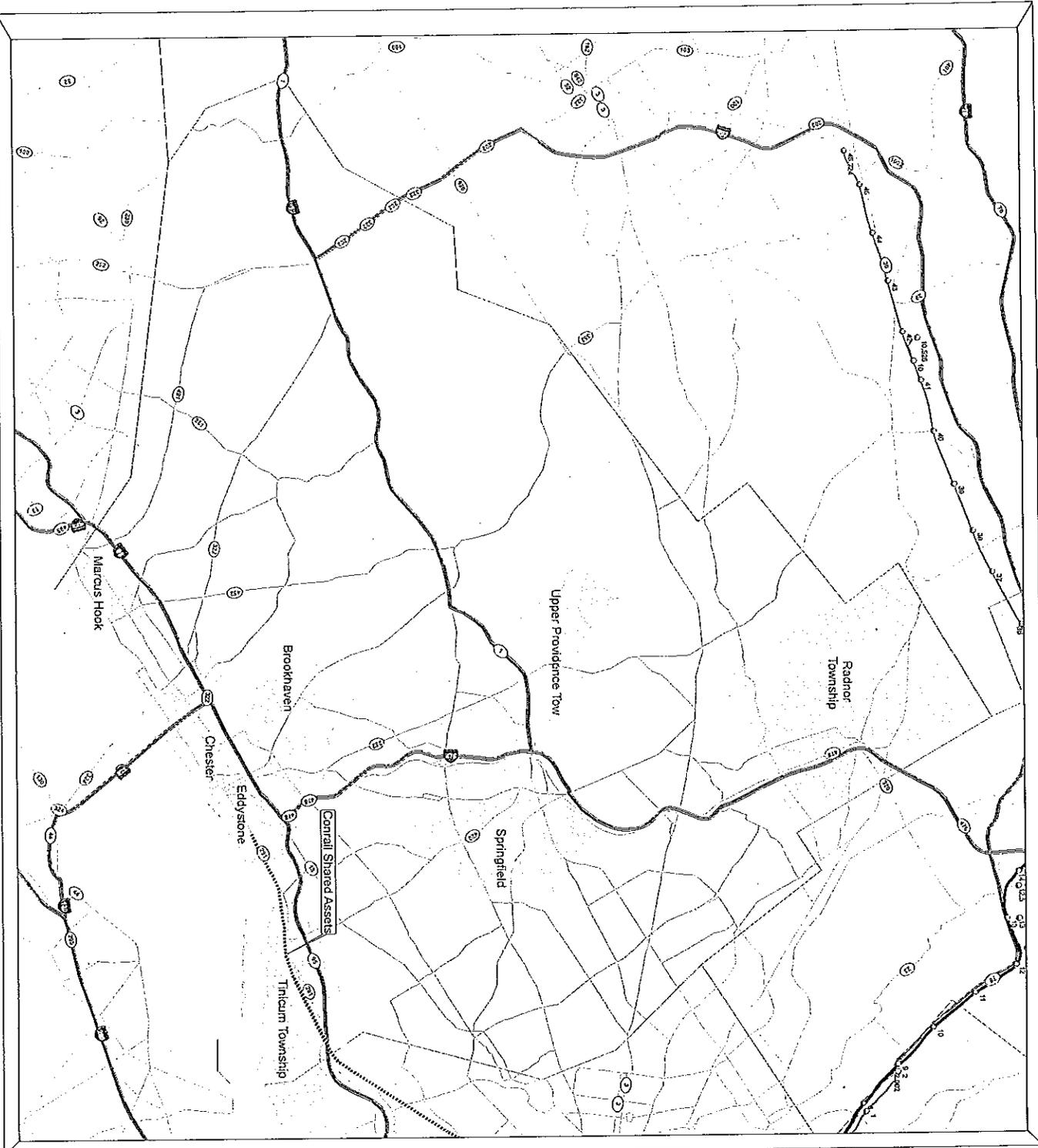
Norfolk Southern Railway Company (NSRC) considers the information to be restricted and of a security sensitive nature. The U.S. Department of Transportation (DOT) has advised the map may be used solely for and by bona fide emergency planning and response organizations for the express purpose of emergency and contingency planning. This map also contains confidential commercial information that is not subject to release under the terms of any governing Freedom of Information Act or similar statute pursuant to 5 U.S.C. § 552(b)(4) and other laws restricting the release of information. Information to treat this data as confidential, providing it only to others with a need to know, and with the understanding that recipients of the data will continue to treat it as confidential. This information should not be distributed publicly in whole or in part without the express written permission of NSRC.

Norfolk Southern Contact:  
 David Scheuendorfer, Manager  
 Hazardous Materials  
 1200 Peachtree St., Box 13,  
 Atlanta, GA 30309  
 404-582-2782 or  
 David.Scheuendorfer@nscorp.com

**Legend**

- Mileposts
- Bakken Crude Oil Route
- ..... NS Bakken Crude Oil Route - Conrail GA
- Other NS Rail
- Interstates
- Highways
- Cities
- Counties

Doc: 808971



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Huntingdon County, PA

**"RAILROAD RESTRICTED INFORMATION"**

DOT Emergency Order  
Petroleum Cude Oil  
Railroad Carriers  
Docket No.  
DOT-OST-2014-0057

Locations where Norfolk Southern operated trains that transport in a single train 1,000,000 or more gallons (33 loaded tank cars) of UN 1207 Petroleum Cude Oil, Class 2, described as SBK001 crude oil.

Norfolk Southern Railway Company (NSRC) has provided this information in a restricted and of a security sensitive nature. The U.S. Department of Transportation (DOT) has authorized the release of this information only to persons with a "need to know." Accordingly, this map may be used solely for and by bona fide emergency planning and response organizations for the express purpose of emergency and contingency planning. The map also contains confidential commercial information that is not subject to release under the Freedom of Information Act or similar statute pursuant to 5 U.S.C. §552(b)(4). DOT and NSRC expect all first responders and others receiving this information to treat this data as confidential, providing it only to others with a need to know, and with the understanding that recipients of the data will continue to treat it as confidential. This information should not be distributed publicly in whole or in part, or used in any way without permission of NSRC.

Norfolk Southern Contact:  
David Schoonderker, Manager  
Hazardous Materials  
1200 Franklin St., Box 10,  
Norfolk, VA 23510  
404.582.4752 or  
David.Schoonderker@nscrp.com

**Legend**

- Mapsets
- Bakken Cude Oil Route
- Chair NS Rail
- Intersections
- Highways
- Cities
- Counties

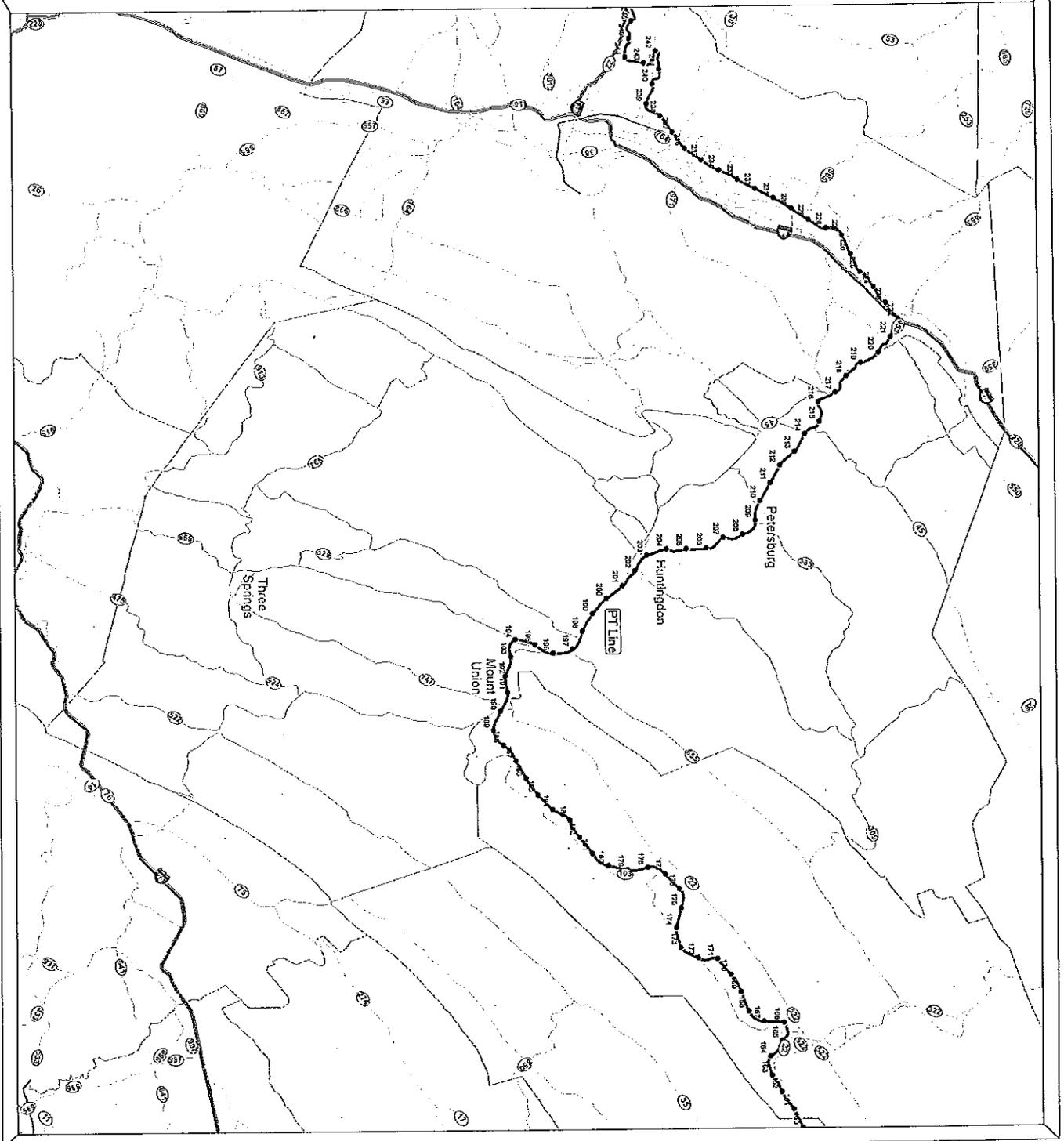
04/11/2014

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Indiana County, PA

**"RAILROAD RESTRICTED INFORMATION"**

DOT Emergency Order  
Petroleum Crude Oil  
Railroad Carriers  
Decree No.  
DOT-OST-2014-0057

Locations where Norfolk Southern operates trains that transport in a single train 1,000,000 or more gallons (35 barrel tank cars) of U.S. 1287 Petroleum Crude Oil, Class 54, described as Bakken Crude Oil.

Norfolk Southern Railway Company (NSRC) has been authorized to be included and of a security sensitive nature. The U.S. Department of Transportation (DOT) has authorized the release of this information only to persons with a "need to know." Accordingly, this map may be used solely for and by bona fide emergency planning and response organizations for the express purpose of emergency and contingency planning. This map also contains confidential commercial information that is the subject of a Freedom of Information Act or similar statute pursuant to 5 U.S.C. §552(b)(4). DOT and NSRC expect all first responders and others receiving this information to treat this data as confidential, providing it only to others with a need to know, and with the understanding that recipients of the data will continue to treat it as confidential. This information should not be distributed publicly in whole or in part, or as express written permission of NSRC.

Norfolk Southern Contact  
David Schoendorfer, Manager  
Hazardous Materials  
200 Peachtree St., Box 13,  
Atlanta, GA 30303  
404-582-3782 or  
David.Schoendorfer@nsr.com

**Legend**

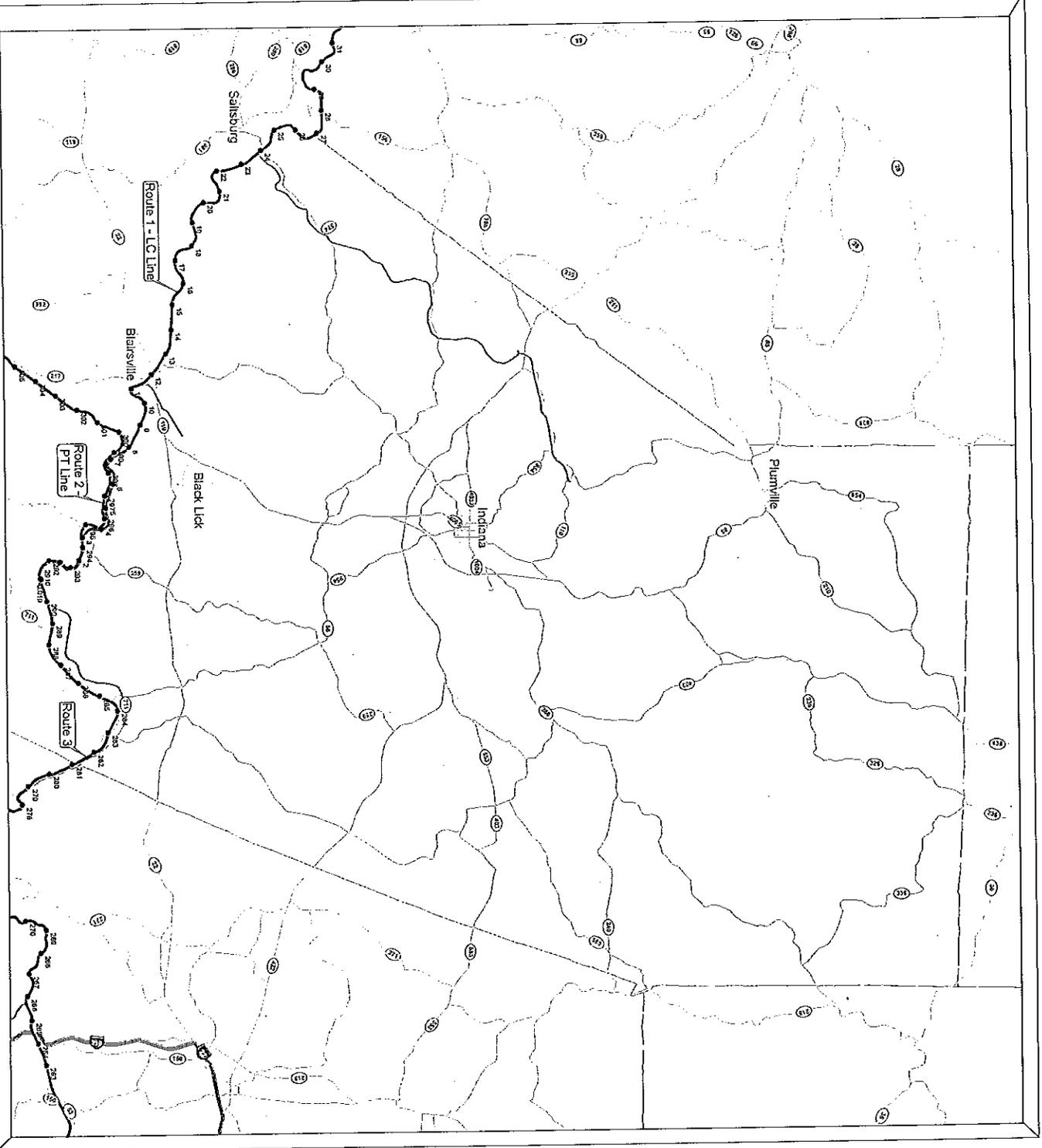
- Missions
- Bakken Crude Oil Route
- Other NS Rail
- Interstate
- Highways
- Cities
- Counties

Scale: 1:500,000



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Juniata County, PA

**"RAILROAD RESTRICTED INFORMATION"**

DOT Emergency Order  
Petroleum Crude Oil  
Railroad Carriers  
Decree No.  
DOT-OST-2014-0057

Locations where Norfolk Southern operates trains that transport in a single train 1,000,000 or more gallons (33 loaded tank cars) of UN 1267 Petroleum Crude Oil, Class 5, described as Bakken crude oil.

Norfolk Southern Railway Company (NSRC) hereby certifies that this map is a restricted information of a sensitive nature. The U.S. Department of Transportation (DOT) has authorized the release of this information only to persons with a "need to know." Accordingly, this map may be used solely for and by bona fide emergency planning and response organizations for the express purpose of contingency and emergency planning. This map also contains confidential commercial information that is not subject to release under the Freedom of Information Act or similar statute pursuant to 5 U.S.C. §552(b)(4). DOT and NSRC expect all first responders and others receiving this information to treat this data as confidential, providing it only to others with a need to know, and with the understanding that recipients of the data will continue to treat it as confidential. This information should not be distributed publicly in whole or in part without the express written permission of NSRC.

Norfolk Southern Contact  
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Hazardous Materials  
1200 Peachtree St., Box 13,  
Atlanta, GA 30309  
404-582-3782 or  
David.Schoenfelder@nscrp.com

**Legend**

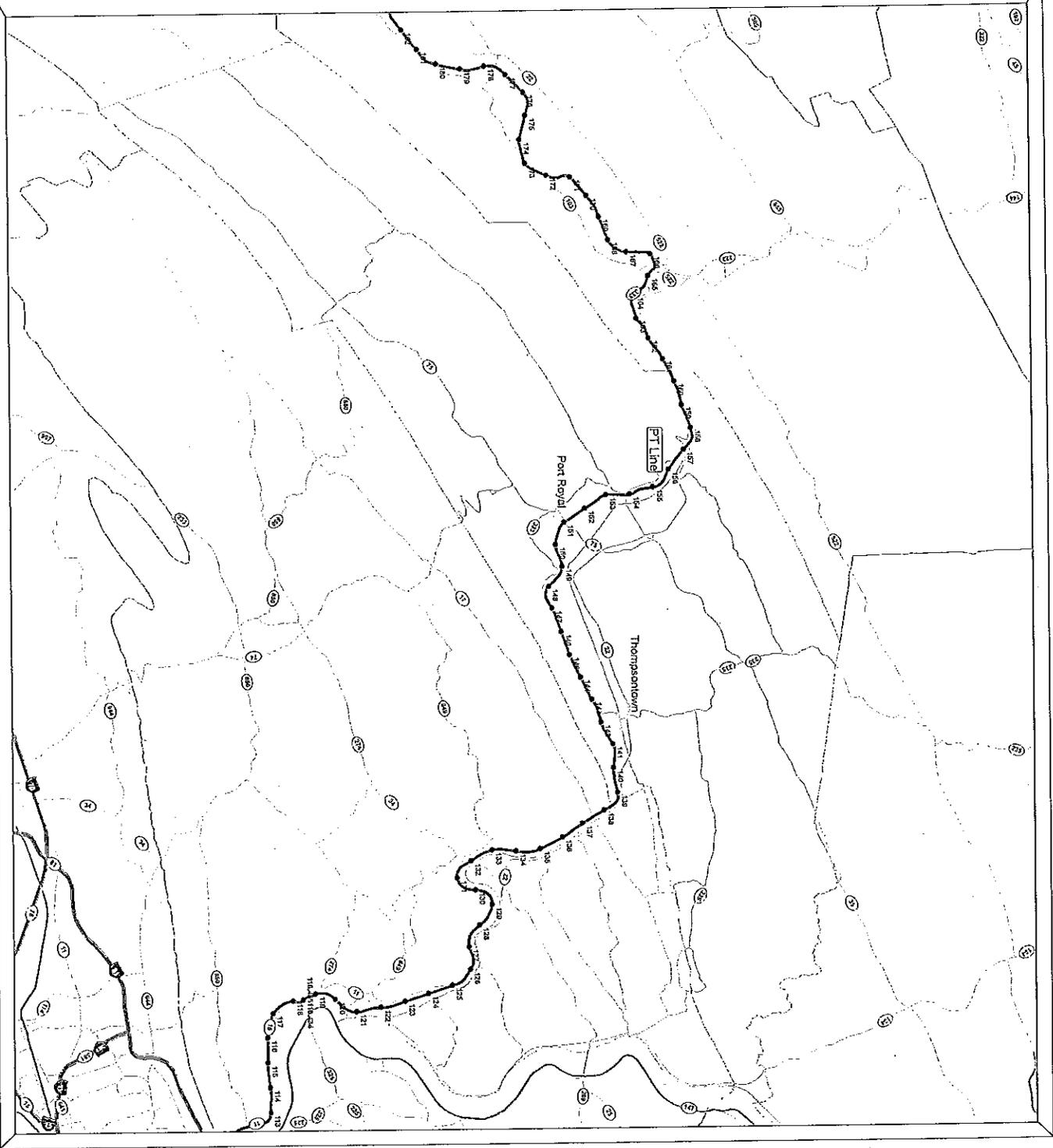
- Mileposts
- Bakken Crude Oil Route
- Other NS Rail
- Interstates
- Highways
- Cities
- Counties

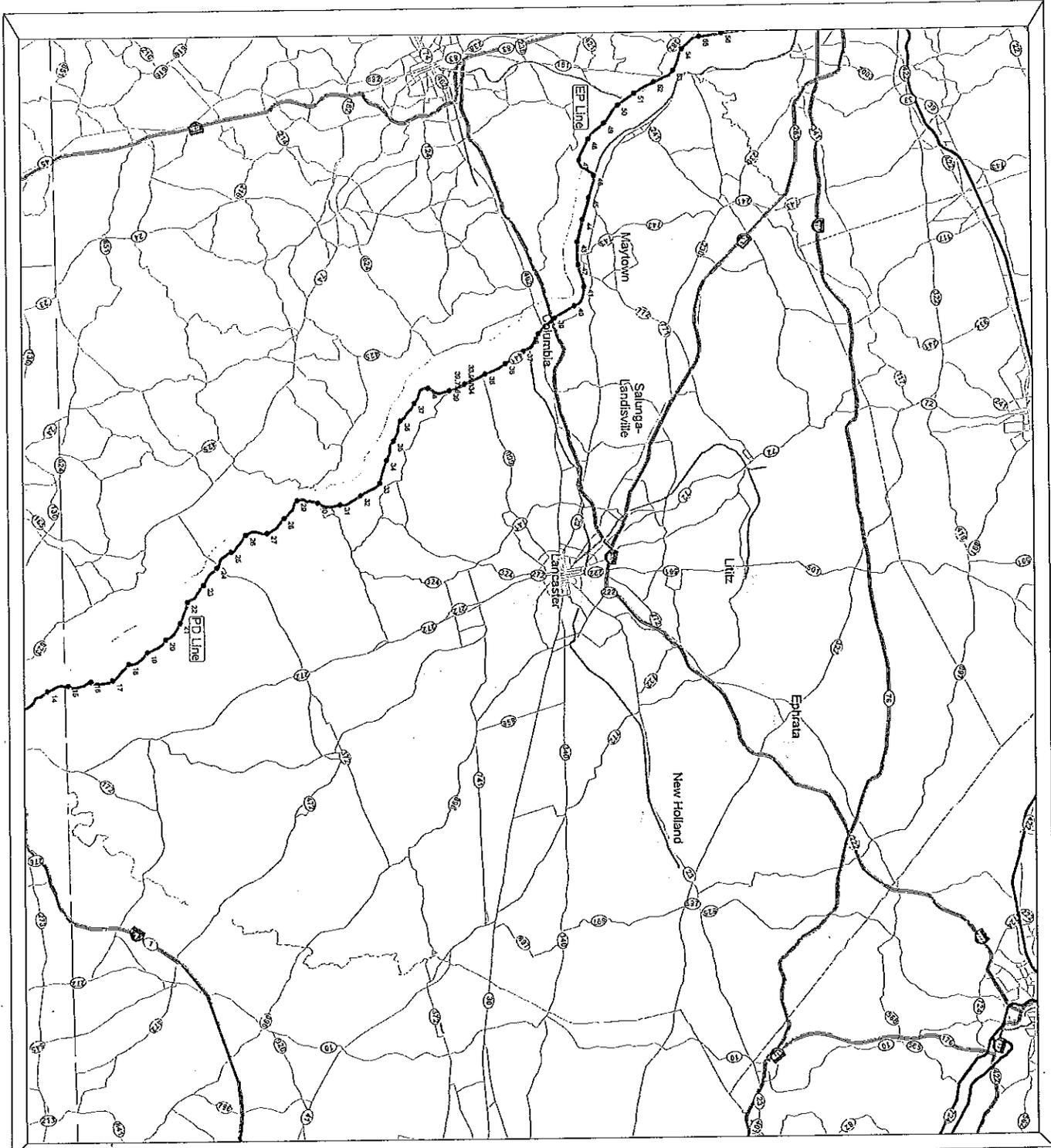
Date: 08/08/14



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Lancaster County, PA

**"RAILROAD RESTRICTED INFORMATION"**

DOT Emergency Order  
 Petroleum Cuts Oil  
 Railroad Cuts  
 DOT-OST-2014-0067

Locations where Norfolk Southern operates trains that transport in a single train 1,000,000 or more gallons (35 loaded tank cars) of UN 1267 Petroleum crude oil, Class 3, described as Bakken crude oil.

Norfolk Southern Railway Company (NSRC) considers this information to be restricted and of a security sensitive nature. The U.S. Department of Transportation (DOT) has authorized the release of this information only to persons with a "need to know" for such purposes as emergency planning and response organizations for the express purpose of emergency and contingency planning. This map also contains confidential commercial information that is not subject to release under the terms of any similar statute pursuant to 5 U.S.C. §552(b)(4). DOT and NSRC expect all first responders and others receiving this confidential, provided it only to others with a need to know, and with the understanding that recipients of the data will continue to treat it as confidential. This information should not be distributed publicly in whole or in part without the express written permission of NSRC.

Norfolk Southern Contact:  
 David Schoenfelder, Manager  
 Hazardous Materials  
 1200 Peachtree St., Box 13,  
 Atlanta, GA 30309  
 404-582-3762 or  
 David.Schoenfelder@nscorp.com

**Legend**

- Allotment
- Bakken Crude Oil Route
- Other NS Rail
- Interstates
- Highways
- Cities
- Counties

Date: 09/04/14



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Lawrence County, PA

**"RAILROAD RESTRICTED INFORMATION"**

DOT Emergency Order  
Petroleum Crude Oil  
Railroad Carrier  
Docket No.  
DOT-OST-2014-0067

Locations where Norfolk Southern operates trains that transport in a single train 1,000,000 gallons of UN 1207 (Petroleum crude oil, Class 3) described as Bakken crude oil.

Norfolk Southern Railway Company (NSRC) considers the information to be restricted and of a security sensitive nature. The U. S. Department of Transportation (DOT) has authorized the release of this information only to persons with a "need to know." Accordingly, this map may be used solely for and by bona fide emergency planning and response organizations for the express purpose of emergency and contingency planning. The information is not to be used for commercial information that is not subject to release under the terms of any governing Freedom of Information Act or similar statute pursuant to 5 U.S.C. §552(b)(4). DOT and NSRC expect all first responders and others receiving this information to treat this data as confidential, providing it only to others with a need to know, and with the understanding that recipients of the data will not disseminate the information. This information should not be distributed publicly in whole or in part without the express written permission of NSRC.

Norfolk Southern Contact:  
David Schoenhofer, Manager  
1200 Peachtree St., Box 13,  
Atlanta, GA 30309  
404-582-3752 or  
David.Schoenhofer@nscorp.com

**Legend**

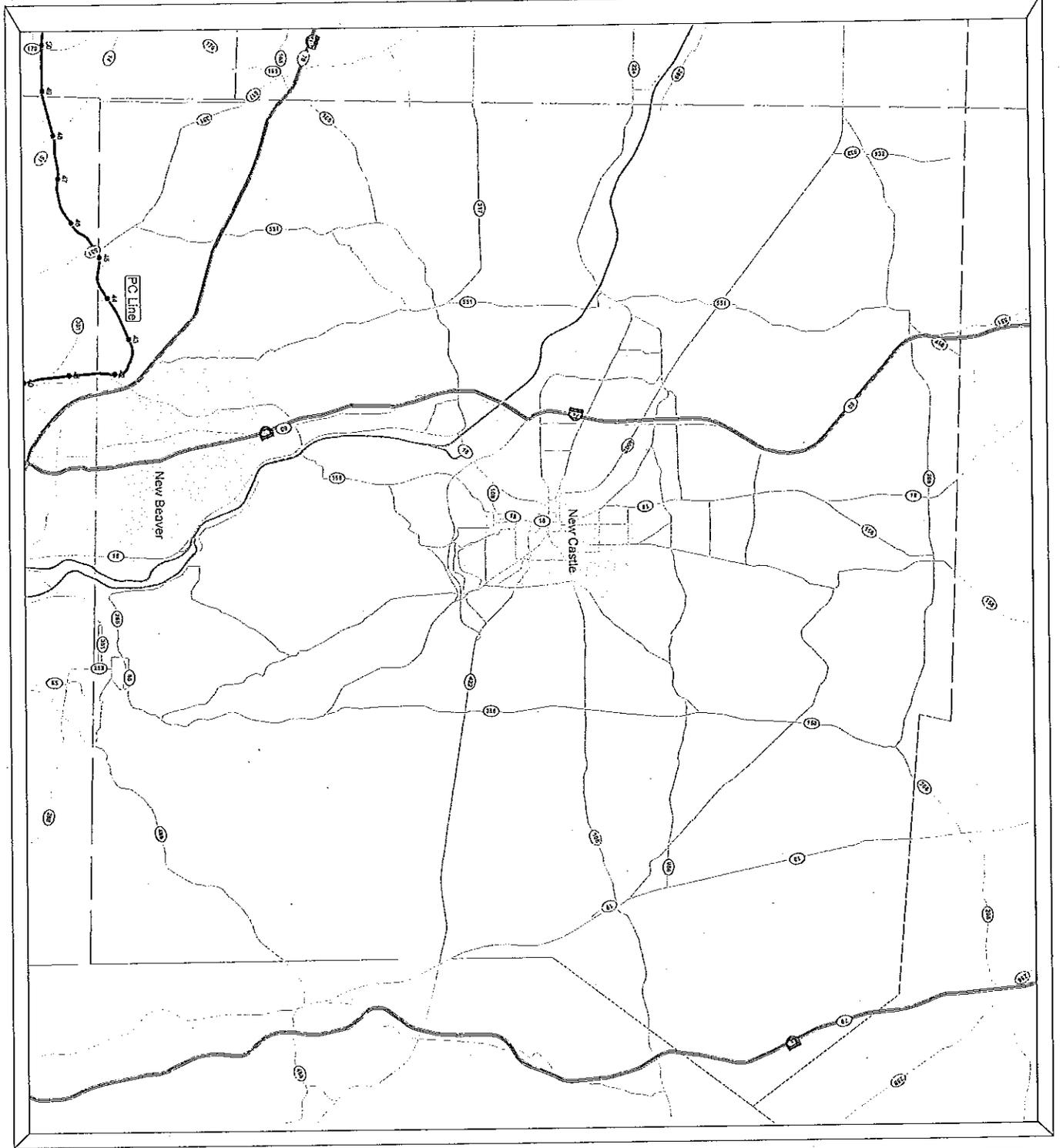
- Mileposts
- Bakken Crude Oil Route
- Other NS Rail
- Interstates
- Highways
- Cities
- Counties

DATE: 05/20/14



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Lebanon County, PA

**"RAILROAD RESTRICTED INFORMATION"**

DOT Emergency Order  
Petroleum Crude Oil  
Railroad  
Docket No.  
DOT-OST-2014-0057

Locations where Norfolk Southern operates trains that transport in a single train 1,000,000 or more gallons (35 loaded tank cars) of UN 1267 Petroleum crude oil, Class 3, described as Bakken crude oil.

Norfolk Southern Railway Company (NSRC) considers this information to be restricted and of a security sensitive nature. The U.S. Department of Transportation (DOT) has authorized the release of this information to the public with a "need to know." Accordingly, this map may be used solely for and by bona fide emergency planning and response organizations for the express purpose of emergency and contingency planning. This map also contains confidential commercial information that is not subject to release under the terms of any governing Freedom of Information Act or similar statute pursuant to 5 U.S.C. § 552(b)(4). DOT is not releasing this information to the public without the first information to treat this data as confidential, providing it only to others with a need to know, and with the understanding that recipients of the data will continue to treat it as confidential. This information should not be distributed publicly in whole or in part without the express written permission of NSRC.

Norfolk Southern Contact  
David Scheppert, Manager  
Hazardous Materials  
1200 Peachtree St., Box 13,  
Atlanta, GA 30309  
404-582-9782 or  
David.Scheppert@nscorp.com

**Legend**

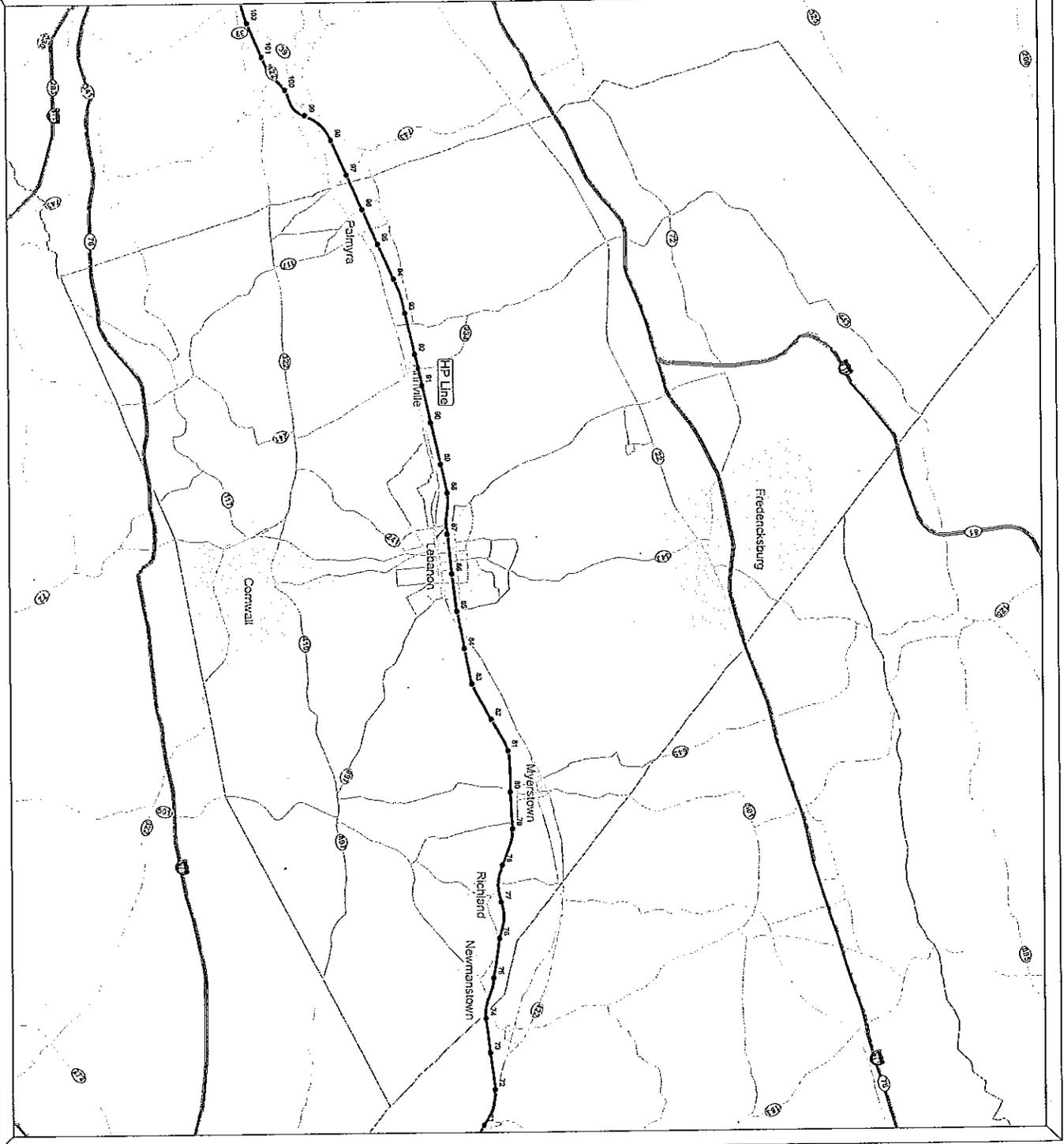
- Mileposts
- Bakken Crude Oil Route
- Other NS Rail
- Interstates
- Highways
- Cities
- Counties

DATE 06/20/14



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Lehigh County, PA

**"RAILROAD RESTRICTED INFORMATION"**

DOT Emergency Order  
 Petroleum Crude Oil  
 Railroad Carriers  
 Report No.  
 DOT-OES12014-0067

Locations where Norfolk Southern operates trains that transport in a single tank 1,000,000 or more gallons (33 loaded tank cars) of OX 2 are described as follows:

Norfolk Southern Railway Company (NSRC) considers this information to be verified and of a security sensitive nature. The U. S. Department of Transportation (DOT) has authorized the release of this information only to persons with a "need to know." Accordingly, this map may be used solely for and by bona fide emergency planning and response organizations for the express purpose of emergency and contingency planning. This map also contains confidential information that is the property of NSRC to release under the terms of any governing Freedom of Information Act or similar statute pursuant to 5 U.S.C. §552(b)(4). DOT and NSRC expect all first responders and others receiving this information to treat this data as confidential, providing it only to others with a need to know, and with the understanding that recipients of the data will continue to treat it as confidential. This information is not to be disseminated publicly, in whole or in part, without the express written permission of NSRC.

Norfolk Southern Contact  
 Dave Schneider, Manager  
 1200 Parkway Station, Suite 13,  
 Atlanta, GA 30309  
 404-589-3782 or  
 David.Schneider@nscorp.com

**Legend**

- Mileposts
- Backen Crude Oil Route
- Other NS Rail
- Interstates
- Highways
- Cities
- Counties

Date: 8/20/14

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Mifflin County, PA

**"RAILROAD RESTRICTED INFORMATION"**

DOT Emergency Order  
 Petroleum Crude Oil  
 Railroad Carriers  
 Docket No.  
 DOT-OST-2014-0067

Locations where Norfolk Southern operates trains that transport in a single train 1,000,000 or more gallons (35 loaded tank cars) of UN 1267 Petroleum Crude Oil, Class 2, described as BULKEN Crude Oil.

Norfolk Southern Railway Company (NSRC) has been notified that this information is of a security sensitive nature. The U. S. Department of Transportation (DOT) has authorized the release of this information only to persons with a "need to know." Accordingly, this map may be used solely for and by bona fide emergency planning and response organizations for the express purpose of emergency and contingency planning. This map also contains confidential commercial information that is not subject to disclosure under the Freedom of Information Act or similar statute pursuant to 5 U.S.C. §552(b)(4). DOT and NSRC expect all first responders and others receiving this information to treat this data as confidential, providing it only to others with a need to know, and with the understanding that recipients of the data will continue to treat it as confidential. This information should not be distributed publicly in whole or in part or the express written permission of NSRC.

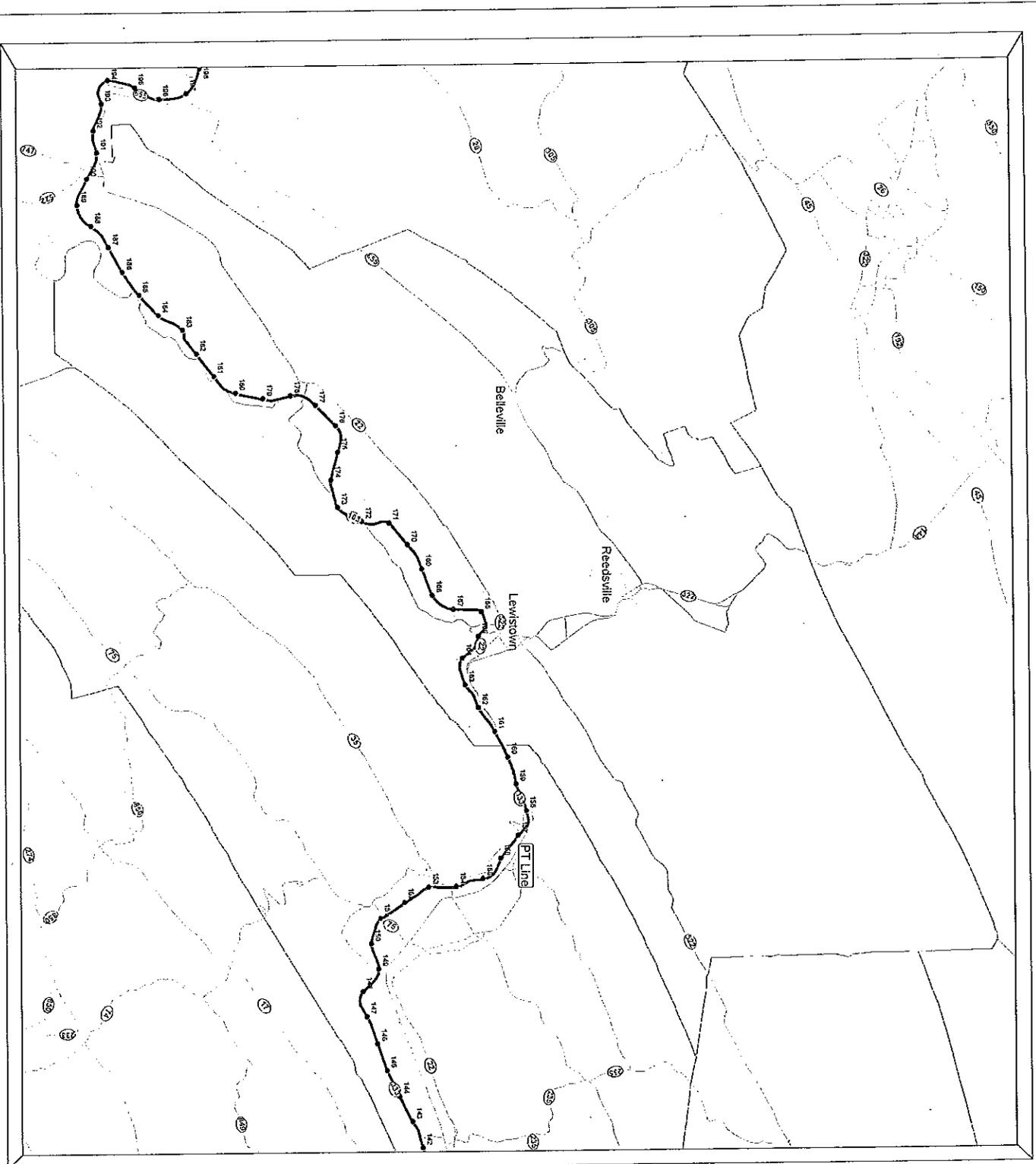
Norfolk Southern Contact:  
 David Schoendorfer, Manager  
 Hazardous Materials  
 1200 Proctorville Station  
 474-822-3722 or  
 David.Schoendorfer@nsrcorp.com

**Legend**

- Mileposts
- BULKEN Crude Oil Route
- Other NS Rail
- Interchanges
- Highways
- Cities
- Counties



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Mortgomery County, PA

**"RAILROAD RESTRICTED INFORMATION"**

DOT Emergency/Other  
Petroleum Crude Oil  
Railroad Cars  
Product No.  
DOT-OST-201-4-0067

Locations where Norfolk Southern operates trains that transport in a single train 1,000,000 or more gallons (35 loaded tank cars) of UN 1267 Petroleum crude oil, Class 3, described as Bakken crude oil.

Norfolk Southern Railway Company (NSRC) considers the information to be restricted and of a security sensitive nature. The U.S. Department of Transportation (DOT) has determined that the information is not in the public interest and that its release would be injurious to the national defense. Accordingly, this map may be used solely for and by bona fide emergency planning and response organizations for the express purpose of emergency and contingency planning. This map also contains confidential commercial information that is not subject to release under the terms of any governing Freedom of Information Act or similar statute pursuant to 5 U.S.C. § 552(b)(7)(C) and other federal laws. Information to treat this data as confidential, providing it only to others with a need to know, and with the understanding that recipients of the data will continue to treat it as confidential. This information should not be distributed publicly in whole or in part without the express written permission of NSRC.

Norfolk Southern Contact:  
David Schoenorfer, Manager  
Hazardous Materials  
1200 Peachtree St., Box 13,  
Atlanta, GA 30309  
404-582-2972 or  
David.Schoenorfer@nspac.com

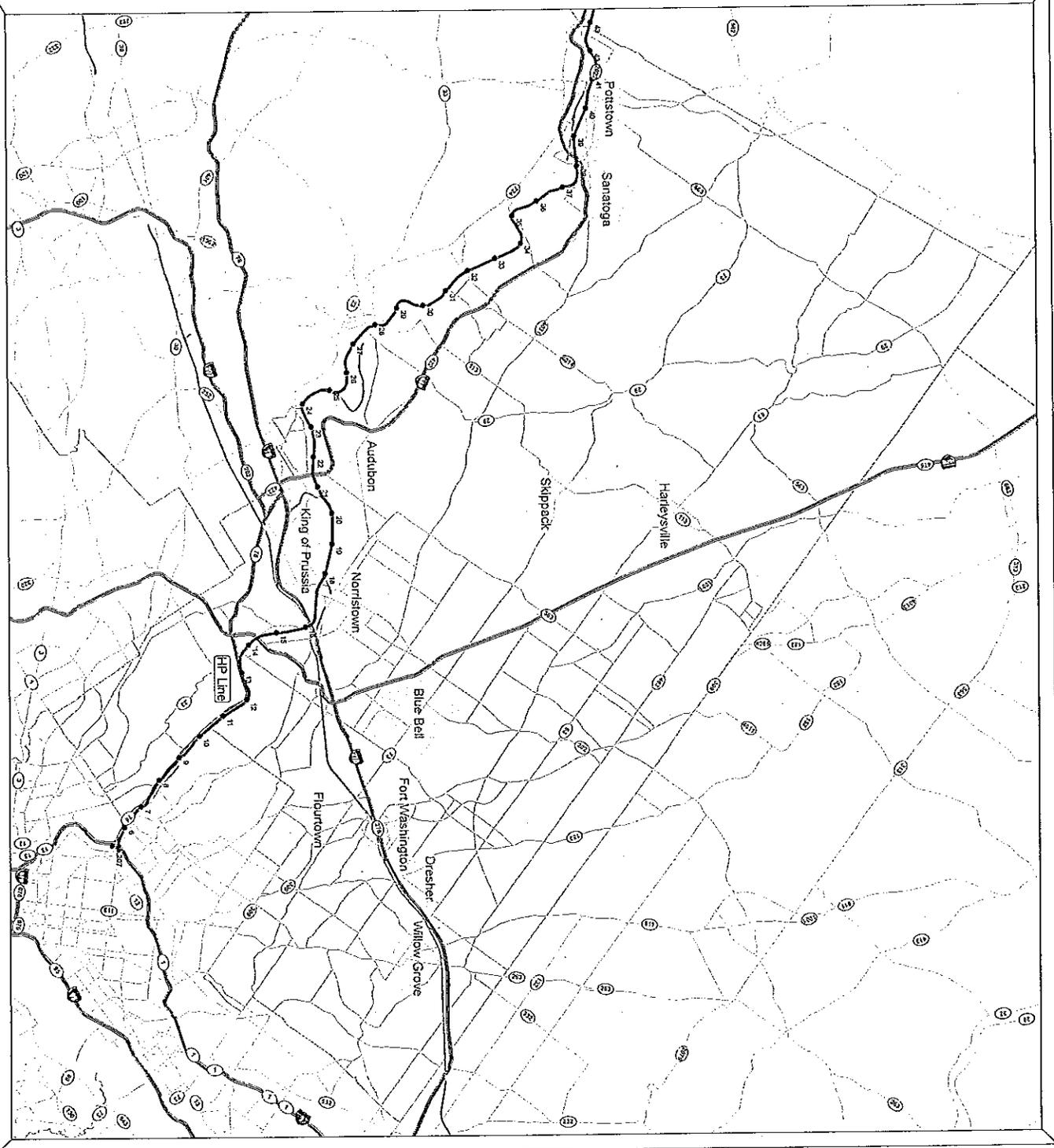
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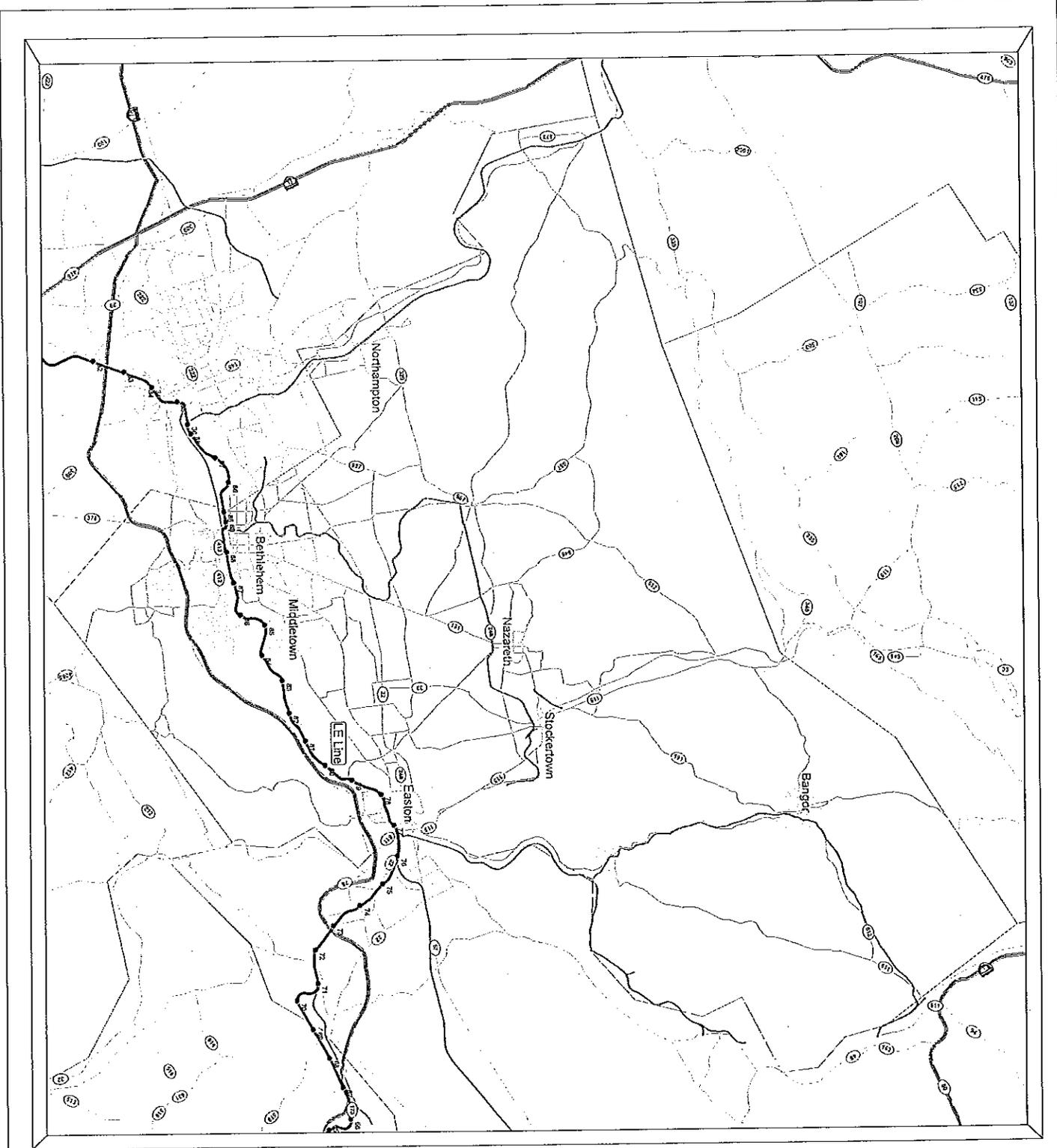
- Mileposts
- Bakken Crude Oil Route
- Other NS Rail
- Interstates
- Highways
- Cities
- Counties



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Northampton County, PA  
 "RAILROAD RESTRICTED  
 INFORMATION"

DOT Emergency Order  
 Petroleum Crude Oil  
 Railroad Cisterns  
 DOT-CST-2014-0067

Locations where Norfolk Southern  
 operates trains that transport in a  
 single train 1,000,000 or more gallons  
 (35 loaded tank cars) of UN 1267  
 Petroleum crude oil, Class 3,  
 described as Bakken crude oil.

Norfolk Southern Railway Company  
 (NSRC) considers this information to be  
 restricted and of a security sensitive  
 nature. The U.S. Department of  
 Transportation (DOT) has authorized the  
 release of this information only to the  
 extent necessary to permit DOT to  
 file emergency planning and response  
 organizations for the express purpose of  
 emergency and contingency planning.  
 This map also contains confidential  
 commercial information that is not subject  
 to release under the terms of any  
 governing Freedom of Information Act or  
 similar statute pursuant to 5 U.S.C.  
 §552(b)(4). DOT and NSRC expect all  
 first responders and other receiving this  
 confidential information to use it only  
 with a need to know, and with the  
 understanding that recipients of the data  
 will continue to treat it as confidential.  
 This information should not be distributed  
 publicly in whole or in part without the  
 express written permission of NSRC.

Norfolk Southern Contact:  
 David Schoenfelder, Manager  
 Hazardous Materials  
 1200 Peachtree St., Box 13,  
 Atlanta, GA 30309  
 404-582-3782 or  
 David.Schoenfelder@nscorp.com

**Legend**

- Mileposts
- Bakken Crude Oil Route
- Other NS Rail
- Interstate
- Highway
- City
- Counties

0 10 20 Miles

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Perry County, PA

**"RAILROAD RESTRICTED INFORMATION"**

DOT Emergency Order  
Petroleum Code Oil  
Railroad Code 01  
Docket No.  
DOT-CST-2014-0067

Locations where Norfolk Southern operates trains that transport in a single train 1,000,000 or more gallons (35 loaded tank cars) of UN 1267 Petroleum crude oil, Class 3, described as Bakken crude oil.

Norfolk Southern Railway Company (NSRC) considers the information to be restricted and of a security sensitive nature. The U.S. Department of Transportation has determined that the release of this information only to persons with a "need to know." Accordingly, this map may be used solely for and by bona fide emergency planning and response organizations for the express purpose of emergency and contingency planning.

This map also contains confidential commercial information that is not subject to release under the terms of any governing Freedom of Information Act or similar statute pursuant to 5 U.S.C. § 552(b)(4). DOT is not releasing this information to treat this data as confidential, providing it only to others with a need to know, and with the understanding that recipients of the data will continue to treat it as confidential. This information should not be distributed publicly in whole or in part without the express written permission of NSRC.

Norfolk Southern Contact  
David Schoenofek, Manager  
Hazardous Materials  
1200 Peachtree St., Box 13,  
Atlanta, GA 30309  
David.Schoenofek@nscorp.com

**Legend**

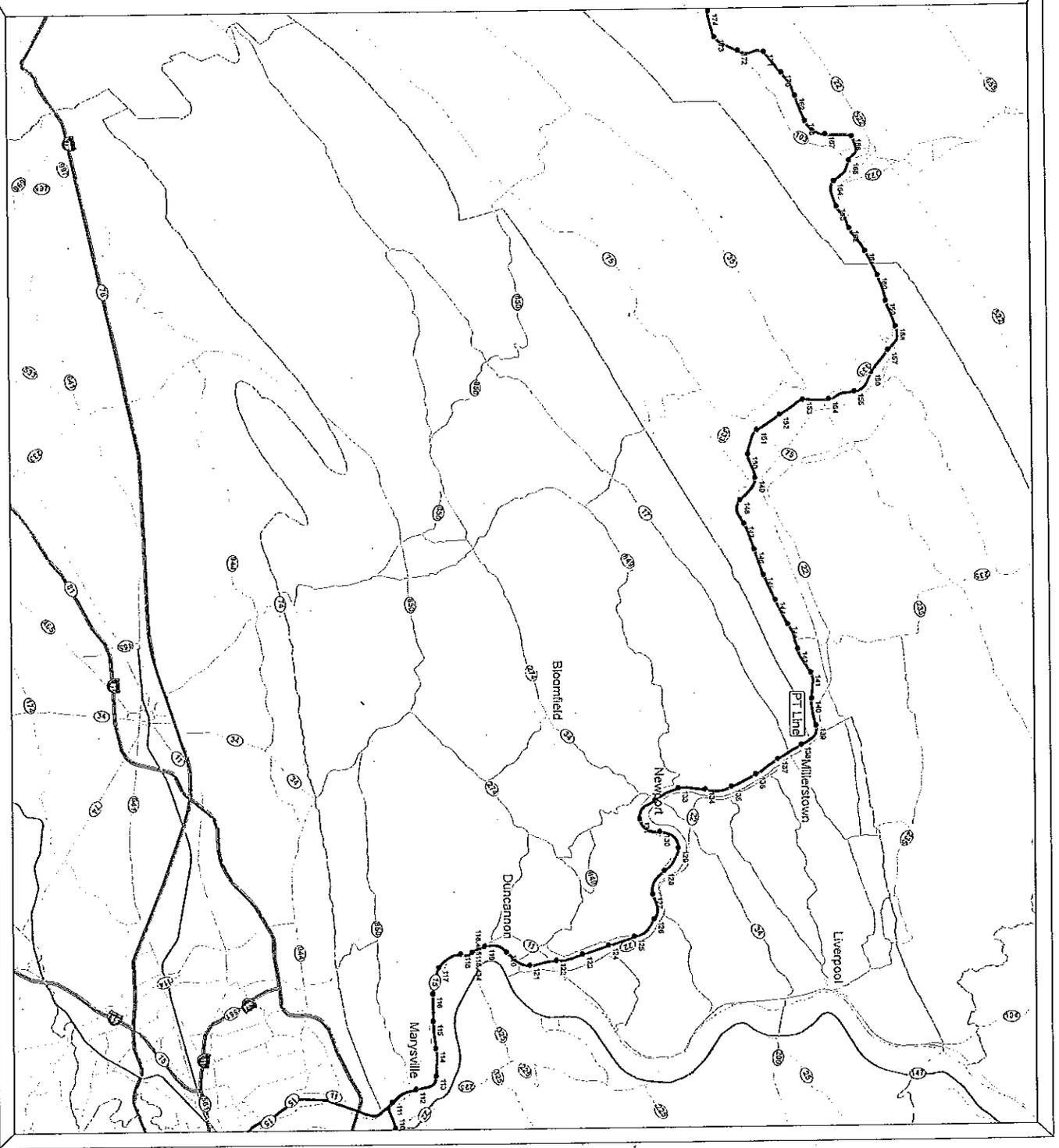
- Mileposts
- Bakken Crude Oil Route
- Other NS Rail
- Interchanges
- Highways
- Cities
- Counties

Date: 06/06/14



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Philadelphia County, PA

**"RAILROAD RESTRICTED INFORMATION"**

DOT Emergency Order  
 Petroleum Crude Oil  
 Railroad Carriers  
 Docket No.  
 DOT-CST-2014-0067

Locations where Norfolk Southern  
 operates trains that transport in a  
 single train 1,000,000 or more gallons  
 of petroleum crude oil, Class 3,  
 described as Bakken crude oil.

Norfolk Southern Railway Company (NSRC) considers this information to be restricted and of a security sensitive nature. The U. S. Department of Transportation (DOT) has authorized the release of this information only to persons with a "need to know." Accordingly, this map may be used solely for and by bona fide emergency planning and response organizations for the express purpose of emergency and emergency planning purposes. This information is not for general commercial information that is not subject to release under the terms of any governing Freedom of Information Act or similar statute pursuant to 5 U.S.C. §552(b)(4). DOT and NSRC expect all first responders and others receiving this information to treat the data as confidential, providing it only to others with a need to know, and with the understanding that recipients of the data will not disseminate the data. This information should not be distributed publicly in whole or in part without the express written permission of NSRC.

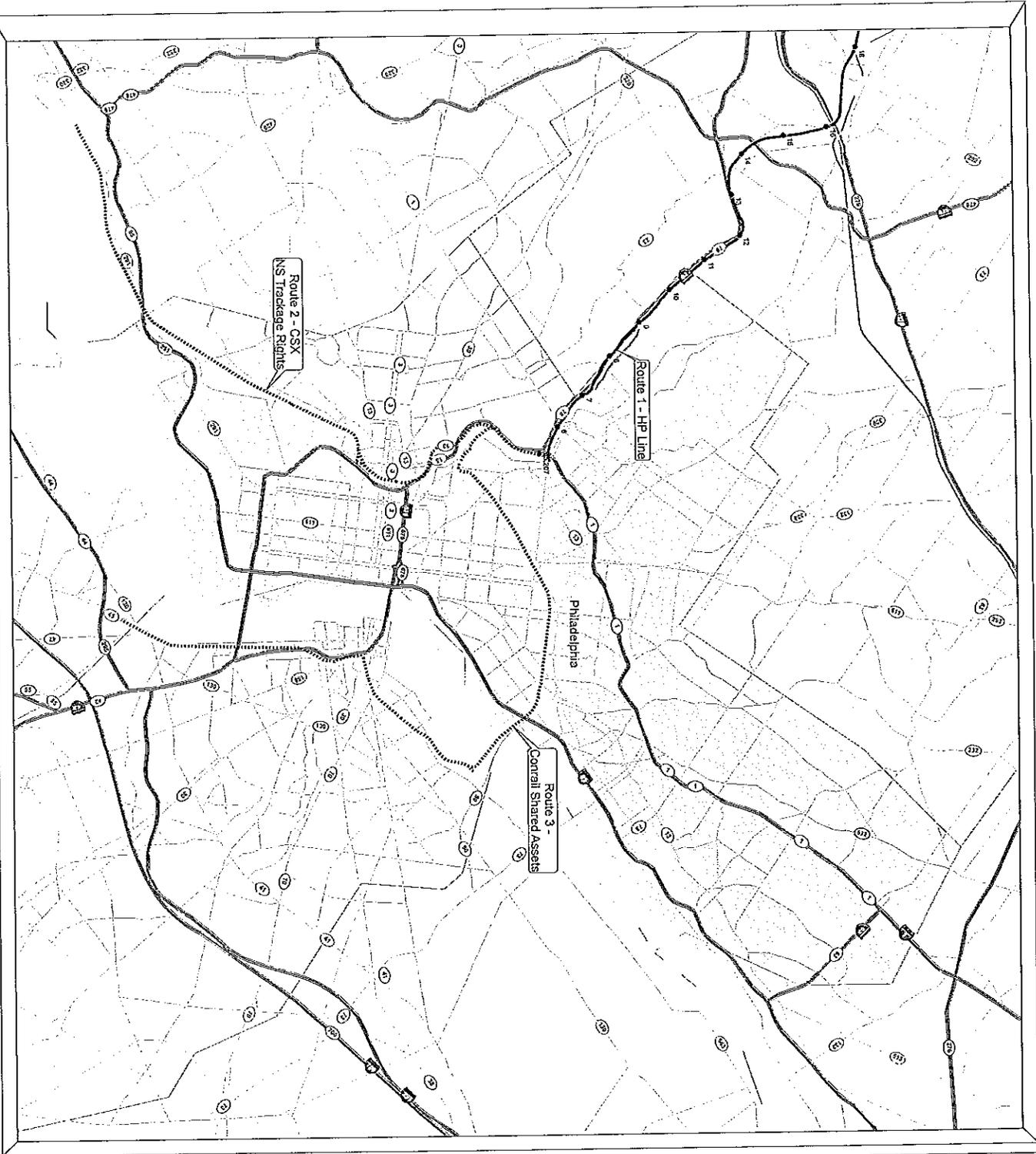
Norfolk Southern Contact:  
 David Schoenfelder, Manager  
 Emergency Response  
 1200 Peachtree St. Box 13,  
 Atlanta, GA 30306  
 404-589-3782 or  
 David.Schoenfelder@nscrp.com

**Legend**

- Airports
- Bakken Crude Oil Route
- ..... Bakken Crude Oil Route - NS TR & SA
- Other NS Rail
- Interstate
- Highway
- City
- County



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Westmoreland County, PA

**"RAILROAD RESTRICTED INFORMATION"**

DOT Emergency Order  
 Petroleum Crude Oil  
 Railroad Carriers  
 Decket No.  
 DOT-OST-2014-0067

Locations where Norfolk Southern operates trains that transport in a single train 1,000,000 or more gallons (35 loaded tank cars) of UN 1267 Petroleum Crude Oil, Class 2, described as Bakken crude oil.

Norfolk Southern Railway Company (NSRC) considers the information to be "restricted information" under the Freedom of Information Act (5 U.S.C. 552(b)(7)(C)). The U.S. Department of Transportation (DOT) has authorized the release of this information only to persons with a "need to know." Accordingly, this map may be used solely for and by bona fide emergency planning and response organizations for the express purpose of emergency and contingency planning. This map also contains confidential commercial information that is not subject to release under the terms of and/or conditions of the Freedom of Information Act (5 U.S.C. 552(b)(7)(C)). DOT and NSRC expect all first responders and others receiving this information to treat this data as confidential, providing it only to others with a need to know, and with the understanding that recipients of the data will continue to treat it as confidential. The information should not be distributed publicly in whole or in part without the express written permission of NSRC.

Norfolk Southern Contact:  
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 Hazardous Materials  
 1200 Peachtree St., 506 10,  
 Atlanta, GA 30309  
 Atlanta, GA 30309  
 David.Schoenfelder@nscorp.com

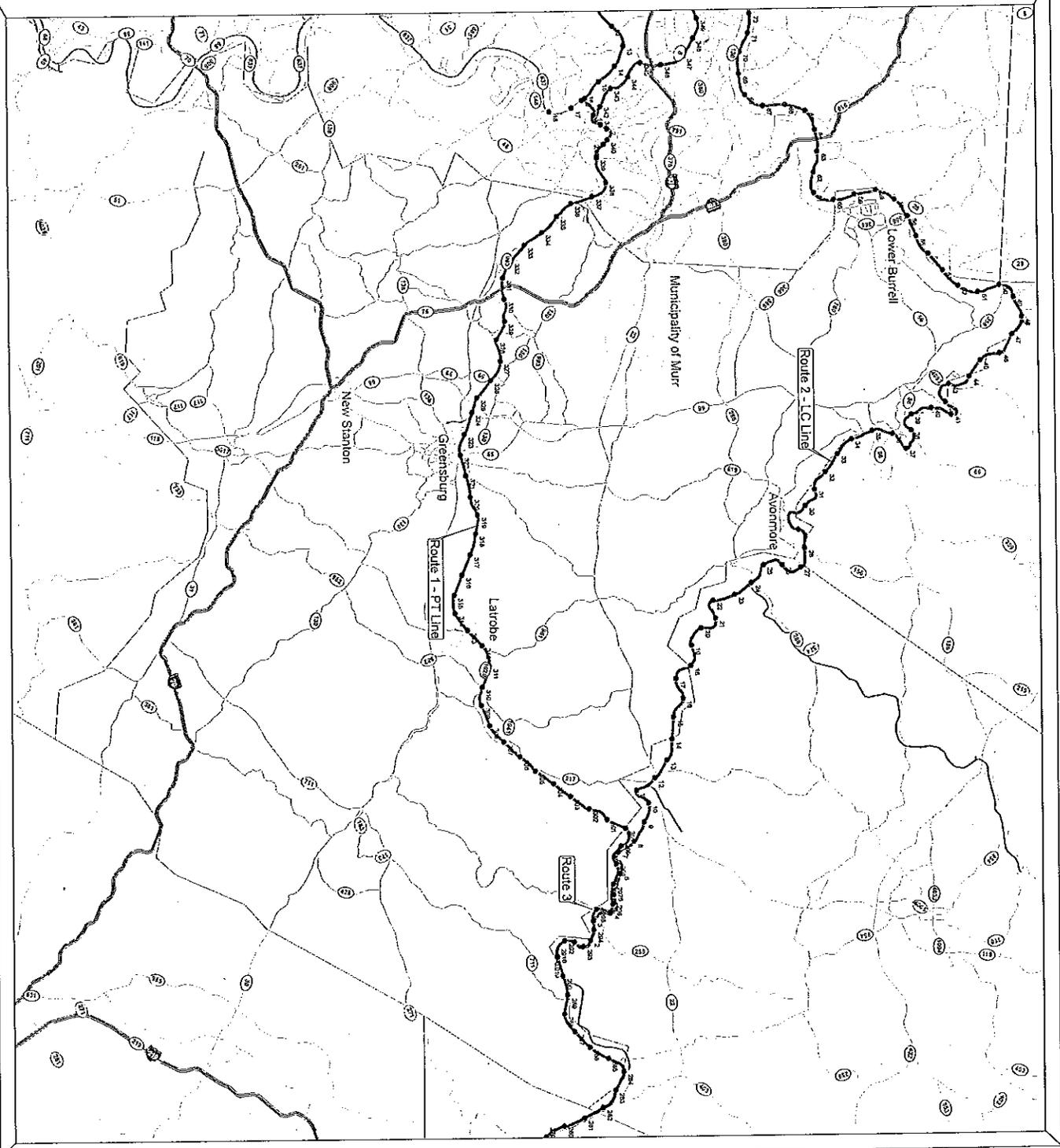
**Legend**

- Mileposts
- Bakken Crude Oil Route
- Other NS Rail
- Interstates
- Highways
- Cities
- Counties



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York County, PA

**"RAILROAD RESTRICTED INFORMATION"**

DOT Emergency Order  
Railroad Carries Oil  
Petroleum ends oil, Class 3,  
described as Bakken crude oil.  
DOT-OST-2014-0087

Locations where Norfolk Southern  
operates trains that transport in a  
single train 1,000,000 or more gallons  
(55 loaded tank cars) of UN 1287  
Petroleum ends oil, Class 3,  
described as Bakken crude oil.

Norfolk Southern Railway Company  
(NSRC) conveys the information to be  
released and of a security sensitive  
nature. The DOT Department of  
Transportation has determined that the  
release of this information only to persons  
with a "need to know." Accordingly, this  
map may be used solely for and by bona  
fide emergency planning and response  
organizations for the express purpose of  
emergency and contingency planning.  
This map also contains confidential  
commercial information that is not subject  
to release under the terms of any  
governing freedom of information Act or  
552(b)(1) of the Privacy Act, 5 U.S.C. all  
that respondents and others receiving this  
information to treat this data as  
confidential, providing it only to others  
with a need to know, and with the  
understanding that recipients of the data  
will continue to treat it as confidential.  
This information should not be distributed  
publicly in whole or in part without the  
express written permission of NSRC.

Norfolk Southern Contact:  
David Schneider, Manager  
Hazardous Materials  
1200 Pantree St., Box 13,  
Atlanta, GA 30309  
404-555-3762 or  
David.Schneider@nsrcorp.com

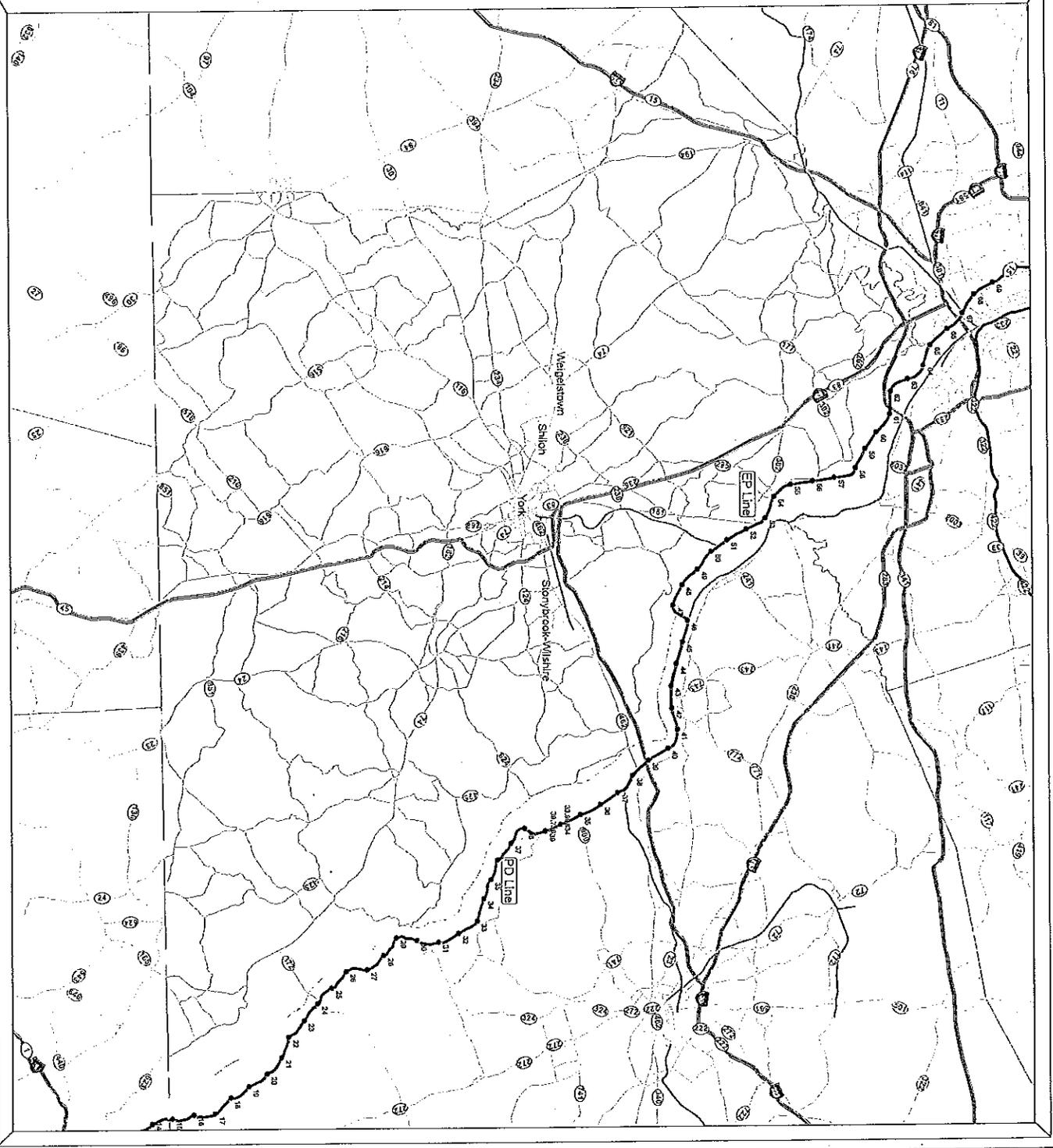
**Legend**

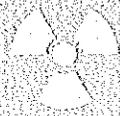
- Mileposts
- Bakken Crude Oil Route
- Other NS Rail
- Intersections
- Highways
- Cities
- Counties



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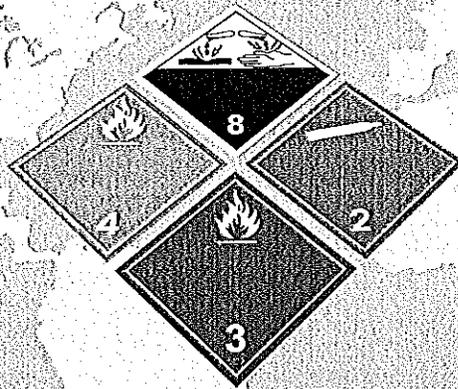




# 2012

## EMERGENCY RESPONSE GUIDEBOOK

A Guidebook for First  
Responders During  
the Initial Phase of a  
Dangerous Goods/  
Hazardous Materials  
Transportation Incident



U.S. Department  
of Transportation  
Pipeline and  
Hazardous Materials  
Safety Administration



Transport  
Canada

Transports  
Canada



Secretariat of Transport  
and Communications

ID No.	Guide No.	Name of Material	ID No.	Guide No.	Name of Material
1223	128	Kerosene	1262	128	Isooctane
1224	127	Ketones, liquid, n.o.s.	1262	128	Octanes
1228	131	Mercaptan mixture, liquid, flammable, poisonous, n.o.s.	1263	128	Paint (flammable)
1228	131	Mercaptan mixture, liquid, flammable, toxic, n.o.s.	1263	128	Paint related material (flammable)
1228	131	Mercaptans, liquid, flammable, poisonous, n.o.s.	1264	129	Paraldehyde
1228	131	Mercaptans, liquid, flammable, toxic, n.o.s.	1265	128	Isopentane
1229	129	Mesityl oxide	1265	128	n-Pentane
1230	131	Methanol	1265	128	Pentanes
1230	131	Methyl alcohol	1266	127	Perfumery products, with flammable solvents
1231	129	Methyl acetate	1267	128	Petroleum crude oil
1233	130	Methylamyl acetate	1268	128	Petroleum distillates, n.o.s.
1234	127	Methylal	1268	128	Petroleum products, n.o.s.
1235	132	Methylamine, aqueous solution	1270	128	Oil, petroleum
1237	129	Methyl butyrate	1270	128	Petroleum oil
1238	155	Methyl chloroformate	1272	129	Pine oil
1239	131	Methyl chloromethyl ether	1274	129	n-Propanol
1242	139	Methyldichlorosilane	1274	129	normal Propyl alcohol
1243	129	Methyl formate	1274	129	Propyl alcohol, normal
1244	131	Methylhydrazine	1275	129	Propionaldehyde
1245	127	Methyl isobutyl ketone	1276	129	n-Propyl acetate
1246	127P	Methyl isopropenyl ketone, stabilized	1277	132	Monopropylamine
1247	129P	Methyl methacrylate monomer, stabilized	1277	132	Propylamine
1248	129	Methyl propionate	1278	129	1-Chloropropane
1249	127	Methyl propyl ketone	1278	129	Propyl chloride
1250	155	Methyltrichlorosilane	1279	130	1,2-Dichloropropane
1251	131P	Methyl vinyl ketone, stabilized	1279	130	Dichloropropane
1259	131	Nickel carbonyl	1279	130	Propylene dichloride
1261	129	Nitromethane	1280	127P	Propylene oxide
			1281	129	Propyl formates
			1282	129	Pyridine
			1286	127	Rosin oil

Name of Material	Guide No.	ID No.	Name of Material	Guide No.	ID No.
Perfluoro(ethyl vinyl ether)	115	3154	Petroleum distillates, n.o.s.	128	1268
Perfluoromethyl vinyl ether	115	3153	Petroleum gases, liquefied	115	1075
Perfluoro(methyl vinyl ether)	115	3153	Petroleum oil	128	1270
Perfumery products, with flammable solvents	127	1266	Petroleum products, n.o.s.	128	1268
Permanganates, inorganic, aqueous solution, n.o.s.	140	3214	Petroleum sour crude oil, flammable, toxic	131	3494
Permanganates, inorganic, n.o.s.	140	1482	Phenacyl bromide	153	2645
Peroxides, inorganic, n.o.s.	140	1483	Phenetidines	153	2311
Persulfates, inorganic, aqueous solution, n.o.s.	140	3216	Phenol, molten	153	2312
Persulfates, inorganic, n.o.s.	140	3215	Phenol, solid	153	1671
Persulphates, inorganic, aqueous solution, n.o.s.	140	3216	Phenol solution	153	2821
Persulphates, inorganic, n.o.s.	140	3215	Phenolates, liquid	154	2904
Pesticide, liquid, flammable, poisonous, n.o.s.	131	3021	Phenolates, solid	154	2905
Pesticide, liquid, flammable, toxic, n.o.s.	131	3021	Phenolsulfonic acid, liquid	153	1803
Pesticide, liquid, poisonous, flammable, n.o.s.	131	2903	Phenolsulphonic acid, liquid	153	1803
Pesticide, liquid, poisonous, n.o.s.	151	2902	Phenoxyacetic acid derivative pesticide, liquid, flammable, poisonous	131	3346
Pesticide, liquid, toxic, flammable, n.o.s.	131	2903	Phenoxyacetic acid derivative pesticide, liquid, flammable, toxic	131	3346
Pesticide, liquid, toxic, n.o.s.	151	2902	Phenoxyacetic acid derivative pesticide, liquid, poisonous	153	3348
Pesticide, solid, poisonous	151	2588	Phenoxyacetic acid derivative pesticide, liquid, poisonous, flammable	131	3347
Pesticide, solid, poisonous, n.o.s.	151	2588	Phenoxyacetic acid derivative pesticide, liquid, toxic	153	3348
Pesticide, solid, toxic, n.o.s.	151	2588	Phenoxyacetic acid derivative pesticide, liquid, toxic, flammable	131	3347
PETN mixture, desensitized, solid, n.o.s., with more than 10% but not more than 20% PETN	113	3344	Phenoxyacetic acid derivative pesticide, solid, poisonous	153	3345
Petrol	128	1203	Phenoxyacetic acid derivative pesticide, solid, toxic	153	3345
Petrol and ethanol mixture, with more than 10% ethanol	127	3475	Phenylacetonitrile, liquid	152	2470
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			Phenylcarbylamine chloride	151	1672

# GUIDE 128

FLAMMABLE LIQUIDS  
(NON-POLAR/WATER-IMMISCIBLE)

ERG2012

## POTENTIAL HAZARDS

### FIRE OR EXPLOSION

- **HIGHLY FLAMMABLE:** Will be easily ignited by heat, sparks or flames.
- Vapors may form explosive mixtures with air.
- Vapors may travel to source of ignition and flash back.
- Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Vapor explosion hazard indoors, outdoors or in sewers.
- Those substances designated with a (P) may polymerize explosively when heated or involved in a fire.
- Runoff to sewer may create fire or explosion hazard.
- Containers may explode when heated.
- Many liquids are lighter than water.
- Substance may be transported hot.
- For UN3166, if Lithium ion batteries are involved, also consult GUIDE 147.
- If molten aluminum is involved, refer to GUIDE 169.

### HEALTH

- Inhalation or contact with material may irritate or burn skin and eyes.
- Fire may produce irritating, corrosive and/or toxic gases.
- Vapors may cause dizziness or suffocation.
- Runoff from fire control or dilution water may cause pollution.

## PUBLIC SAFETY

- **CALL EMERGENCY RESPONSE** Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.
- As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate closed spaces before entering.

### PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.

### EVACUATION

#### Large Spill

- Consider initial downwind evacuation for at least 300 meters (1000 feet).

#### Fire

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

**EMERGENCY RESPONSE****FIRE**

**CAUTION:** All these products have a very low flash point: Use of water spray when fighting fire may be inefficient.

**CAUTION:** For mixtures containing alcohol or polar solvent, alcohol-resistant foam may be more effective.

**Small Fire**

- Dry chemical, CO<sub>2</sub>, water spray or regular foam.

**Large Fire**

- Water spray, fog or regular foam.
- Do not use straight streams.
- Move containers from fire area if you can do it without risk.

**Fire Involving Tanks or Car/Trailer Loads**

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

**SPILL OR LEAK**

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- Prevent entry into waterways, sewers, basements or confined areas.
- A vapor suppressing foam may be used to reduce vapors.
- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- Use clean non-sparking tools to collect absorbed material.

**Large Spill**

- Dike far ahead of liquid spill for later disposal.
- Water spray may reduce vapor; but may not prevent ignition in closed spaces.

**FIRST AID**

- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Wash skin with soap and water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

# PETROLEUM CRUDE OIL

## Class 3 (Flammable Liquid) or Combustible Liquid

### GENERAL INFORMATION

Petroleum crude oil is a flammable, variably light to dark colored liquid hydrocarbon with properties between gasoline and kerosene. It is used as a raw material for making fuels and various chemicals. Barely soluble in water and slightly lighter, petroleum crude oil will form a floating surface slick. Flammability of this product can vary widely having a flash point range from -45 to 392°F. The liquid may evaporate easily even at low temperatures. The vapors of the more volatile, and therefore more flammable crude oil, are heavier than air, may accumulate and persist in low areas, and may travel some distance to a source of ignition and flash back. Similarly, accumulations of vapor in confined spaces such as buildings or sewers may explode if ignited and there is some potential that containers of liquid may rupture violently if exposed to fire or excessive heat for sufficient time duration. Typical crude oil weigh approximately 6.3-8.3 pounds per gallon.

Petroleum crude oil will not react with water or other common materials and is stable in normal transportation. It is incompatible with strong oxidizers, and may attack some forms of plastics, rubber, and coatings. Toxicity by potential routes of exposure is generally considered low to moderate. The more volatile mixtures may be present in air in high concentrations creating an inhalation hazard. There is also the possibility that the crude oil may contain some fraction of toxic benzene or hydrogen sulfide (see separate guides). Products of combustion may include toxic constituents.

### CHEMICAL/PHYSICAL DATA

**Solubility in Water:** Practically insoluble, below 0.1%

**Solubility in Other Chemicals:** Soluble in various hydrocarbon liquids.

**Specific Gravity (Liquid):** Varies, 0.75 - 0.99

**Vapor Density:** 3.4 (approximately)

**Boiling Point:** Varies, 1000+°F (538+°C).

**Melting Point:** Unavailable

**Freezing Point:** Unavailable

**Molecular Weight:** Complex mixture, approximately 99

**Heat of Combustion:** 10,290 - 10,460 cal/g (Petroleum distillates)

**Evaporation Rate (butyl acetate=1):** 10 (approximately)

**Vapor Pressure:** Varies widely with composition, 40 mmHg for petroleum distillates.

**Flash Point:** Varies widely -45 to 392°F (-43 to 200°C)

**Autoignition Temperature:** 450 - 500°F (232 - 260°C)

**Burning Rate:** 4 mm/minute

**Flammable Limits:** 0.4% (LEL) - 15% (UEL)

**Stability:** Stable

**Polymerization Potential:** Will not occur.

**Corrosiveness:** Relatively noncorrosive but may attack some forms of plastics, rubber, and coatings.

**Reactivity with Water:** No reaction

**Reactivity and Incompatibility:** Reacts with strong oxidizing materials. Avoid chlorine, fluorine.

### IDENTIFICATION

**Shipping Name(s):** Petroleum crude oil (USDOT & IMO).

**Synonyms and Tradenames:** Crude oil ; Mineral oil; Rock oil; Coal oil; Petroleum.

**CAS Registry No.:** 8002-05-9

**Chemical Formula:** C<sub>6</sub>-C<sub>13</sub> hydrocarbon mixture. Crude oil is a naturally occurring complex mixture of hydrocarbons whose exact composition and physical properties can vary widely depending upon its source.

**Constituent Components (% each):** Complex mixture of petroleum hydrocarbons; may contain 0-10% benzene.

**UN/NA Designation:** UN1267

**IMO Designation:** 3.1, 3.2 or 3.3, Flammable liquids

**NFPA 704 Hazard Rating:** 2(Health): 3(Flammability): 0(Reactivity)

**Physical Form as Shipped:** Liquid

**Physical Form as Released:** Liquid

**Color of the Shipped Material:** Dark yellow to brown or greenish-black, oily liquid.

**Odor Characteristics:** Like gasoline and kerosene

**Reportable Quantity:** See appendix I.

**Common Uses:** Raw material for making fuels and various chemicals.

**ADDITIONAL INFORMATION AND ASSISTANCE: FOR 24-HOUR TECHNICAL SUPPORT FOR ACCIDENTS INVOLVING SPILLS, LEAKS, FIRES OR EXPOSURES TO CHEMICALS, CONTACT CHEMTREC AT (800) 424-9300 OR (703) 527-3887 (COLLECT).**

# PETROLEUM CRUDE OIL

## Class 3 (Flammable Liquid) or Combustible Liquid



or



or



### POTENTIAL HAZARDS

#### GENERAL HAZARDS

*Threshold Odor Concentration:* Varies

*Unusual Hazards:* Properties uncertain. Vapors of some crude oil may be heavier than air and may travel to a source of ignition. Some may include significant amounts of benzene (see separate guide).

*Short Term Exposure Limit (STEL):* Unavailable

*Time Weighted Average (TLV-TWA):* 86 ppm (350 mg/m<sup>3</sup>) (Petroleum distillates).

*Ceiling (C) Limit:* 444 ppm (1800 mg/m<sup>3</sup>) (Petroleum distillates).

*IDLH:* 1100 ppm or 10% LEL (Petroleum distillates).

*Conditions to Avoid:* Heat, fire, or sparks; contact with incompatible materials; runoff to sewers or water bodies; inhalation, ingestion, or direct physical contact.

#### HEALTH HAZARDS

*Public Health Hazards:* Major hazard is from inhalation of high vapor concentrations in air. Ingestion and direct contact are also to be avoided. (Note: Any benzene in the product increases both acute and chronic health risks.)

*Hazards of Skin or Eye Contact:* Repeated or prolonged contact with liquid petroleum crude oil may cause drying, cracking, and inflammation of the skin due to the defatting action of the product. Contact with the eyes may result in irritation and possibly temporary corneal injury.

*Hazards of Inhalation:* Vapors of petroleum crude oil may be irritating to the eyes and the upper respiratory tract. High concentrations in air may result in narcosis and central nervous system depression with symptoms including inebriation, headache, nausea, dizziness, drowsiness, unconsciousness, convulsions, and possibly death. Some symptoms may be evident after 1 hour at 4000-7000 ppm in air. Acute overexposure may also result in persistent anorexia and nervousness on occasion.

*Hazards of Ingestion:* Ingestion may cause a burning sensation, vomiting, diarrhea, drowsiness, and symptoms listed above. Aspiration into the lungs during vomiting may result in pulmonary edema with possibly severe consequences.

#### FIRE HAZARDS

*Lower Flammable Limit:* 0.4%

*Upper Flammable Limit:* 15%

*Behavior in Fire:* Flammable liquid. Liquid will burn but may be difficult to ignite depending on constituents. Flammable liquids may generate large quantities of flammable vapor upon release. Vapors of flammable liquids are heavier than air, may accumulate and persist in low areas, and may travel to a source of ignition and flash back. There is some potential that containers may rupture violently in fire.

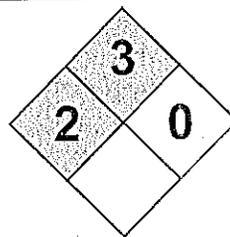
*Hazardous Decomposition Products:* Not well-defined, may include toxic constituents such as carbon monoxide, carbon dioxide, oxides of sulfur and reactive hydrocarbons.

#### EXPLOSION HAZARDS

*Explosive Potential:* Explosion may result if vapors are ignited in a confined area. There is some potential that containers may rupture violently in fire. Product is sensitive to static discharge and is an extreme fire hazard. Vapors can burn with explosive violence.

1267

**PETROLEUM CRUDE OIL**  
Class 3 (Flammable Liquid) or  
Combustible Liquid



**PERSONAL PROTECTIVE CLOTHING AND EQUIPEMENT**

*Protective Clothing Required:* Equipment should prevent repeated or prolonged skin contact and any reasonable probability of eye contact with the spilled product. This may include rubber boots, gloves, face shields, splash-proof safety goggles, and other impervious and resistant clothing. Compatible materials may include neoprene, nitrile rubber, chlorinated polyethylene, polyurethane, polyvinyl alcohol, Viton®, and nitrile-butadiene rubber.

*Respiratory Protection:* For unknown concentrations, fire fighting, or high concentrations, a self-contained breathing apparatus (SCBA) with full facepiece. For lesser concentrations, an air purifying respirator (APR) with organic vapor cartridge with a full facepiece within the use limitations of these devices.

**FIRST AID**

*Nonspecific Symptoms:* Irritation of the eyes, skin, or respiratory tract; other symptoms of exposure.

*First Aid for Inhalation:* Remove victim to fresh air and keep warm and at rest. If breathing becomes difficult or if breathing has stopped, administer artificial respiration. Get medical attention immediately. (Caution: Administration of mouth-to-mouth resuscitation may expose the first aid provider to chemical within the victim's lungs or vomit.)

*First Aid for Skin Contact:* In case of eye contact, immediately flush eyes with plenty of water for at least 15 minutes, while holding eyelids apart in order to rinse entire surface of eye and lids with water. Provide supportive care and seek immediate medical assistance by a physician from the nearest medical treatment facility.

*First Aid for Eye Contact:* Remove all contaminated clothing. Wash affected body areas with large amounts of water. Decontaminate the patient thoroughly before transporting to a medical treatment facility to prevent the potential for secondary contamination.

*First Aid for Ingestion:* Do not induce vomiting. Keep victim warm and at rest. Get medical attention immediately.

*Note to Physician:* Hydrocarbons may sensitize the heart to epinephrine and other circulating catecholamines so that arrhythmias may occur. Careful consideration of this potential adverse effect should precede administration of epinephrine or other cardiac stimulants and the selection of bronchodilators.

**FIRE RESPONSE**

*Extinguishing Agents:* Carbon dioxide, dry chemical, foam, or water spray. Water may be ineffective and there is some possibility that foam or water may cause some frothing.

*Extinguishing Techniques:* Stay upwind. Wear breathing apparatus and appropriate protective clothing. Move container from fire area if no risk. Do not extinguish burning cargo unless flow can be stopped safely. Be alert to container rupture potential. Stay away from ends of tank involved in fire but realize that shrapnel may travel in any direction. Use water from side and from safe distance to keep fire exposed containers cool. For massive fire in cargo area, use unmanned hose holder or monitor nozzles. Withdraw immediately in case of rising sound from venting safety device or discoloration of tank.

*Note:* Crude oil fires may produce a highly dangerous phenomenon known as a BOILOVER, whereby light hydrocarbons burn off at the surface of the fire and heavy superheated hydrocarbons sink to the bottom and come in contact with water bottoms. The super heated product converts the water to steam and forces burning crude oil out of the tank. Burning crude oil which has accumulated in tanks or diked areas are susceptible to boilovers. Seek expert advice on how to fight a crude oil fire.

**SPILL RESPONSES**

*General Information:* Proceed with caution. Restrict access to area. Keep unprotected personnel upwind of spill area.

Eliminate ignition sources. Prevent liquid from entering sewers and confined spaces. Protect sewers and waterways from contaminated runoff. Notify proper authorities, downstream sewer and water treatment operations, and other downstream users of potentially contaminated water. Note that intake of petroleum crude oil may result in rupture or explosion of boilers or industrial process equipment. Use intrinsically safe equipment where necessary. Choose equipment, where possible, that is not corroded or otherwise damaged by the spilled product. Take the specific flammability hazard and possible volatility of the spilled product into account while planning the response.

# PETROLEUM CRUDE OIL

## Class 3 (Flammable Liquid) or Combustible Liquid

### AIR RELEASE

#### TECHNIQUE

**MONITOR THE SITUATION . . .** The product may not produce large amounts of hazardous airborne contaminants in many outdoor spill situations. It may be advisable in some cases to simply monitor the situation until the spilled product is removed by product and container specialists.

#### CONSEQUENCE

Hazardous levels of product in air may be found in the local spill area and immediately downwind.

#### MITIGATION

Remove the spilled product as soon as possible. Restrict access to the local spill area and areas immediately downwind by unprotected personnel.

#### TECHNIQUE

**WATER FOG OR SPRAY . . .** Water fog or spray applied to petroleum crude oil vapors or fumes may accelerate their dispersal in the atmosphere. (Note: There is some possibility that water may cause frothing.)

#### CONSEQUENCE

Increases in spill surface area and atmospheric conditions may increase the rate of vapor generation. In enclosed areas, runoff may add to spill volume and overflow impoundments. Water runoff may contain a small amount (if any) of petroleum crude oil from contact with airborne vapors or fumes.

#### MITIGATION

Contain contaminated water and remove or treat as soon as possible to prevent spread of contamination. Be alert to conditions such as fire hose runoff or rainwater that may add to spill volume and overflow impoundments.

#### TECHNIQUE

**FOAM . . .** Firefighting foam applied to the surface of liquid pools may slow the release of petroleum crude oil vapors into the atmosphere. (Note: There is some possibility that foam may cause frothing.)

#### CONSEQUENCE

The effects of the foam may be short term. As the foam breaks down, release of vapors will increase. Products of foam breakdown will add to the volume of spilled material.

#### MITIGATION

Continue foam applications until spilled product is removed. Contain foam runoff and treat as hazardous waste.

### LAND SPILL

#### TECHNIQUE

**CONFINEMENT DIKES . . .** Petroleum crude oil may be confined by building dikes using soil, sand or other materials.

#### CONSEQUENCE

Confined petroleum crude oil may percolate into soil or seep through dike material. This may result in loss of confined product and spread of contamination.

#### MITIGATION

Remove or neutralize contained product as soon as possible to prevent spread of contamination. Be alert to conditions such as fire hose runoff or rainwater that may overflow impoundments. Where possible, line collection area with compatible impervious materials.

#### TECHNIQUE

**EXCAVATION . . .** Spills of material may be confined by building trenches or ditches.

#### CONSEQUENCE

Material may leach into soil. Deep excavations may increase the potential for groundwater contamination in some areas. This may result in loss of confined product and spread of contamination.

#### MITIGATION

Remove material from contaminated area as quickly as possible to prevent possible contamination beyond the spill area. Water sprays may be used to reduce vapors, except in enclosed areas where runoff may accumulate and overflow impoundments. Be alert to condition such as increasing spill volume with runoff or rain water which may overflow diked areas. If possible, confinement areas should be lined with suitable, impervious material to prevent penetration into soil.

# PETROLEUM CRUDE OIL

## Class 3 (Flammable Liquid) or Combustible Liquid

### **TECHNIQUE**

**PUMPING/VACUUM SUCTION** . . . Spilled material confined in diked areas may be recovered using compatible hoses, pumps and vacuum trucks. All product transfer equipment should be properly bonded and grounded.

### **CONSEQUENCE**

Equipment that is not compatible with the spilled product may become damaged and present a safety hazard for response personnel. Mechanical equipment will become contaminated with removed product.

### **MITIGATION**

Use equipment constructed of materials compatible with the spilled product. Decontaminate equipment.

### **TECHNIQUE**

**ABSORPTION** . . . Spreading of spilled product may be controlled by absorbing liquid with sand, earth, clay, fly ash, cement powder, peat moss, saw dust, straw, commercial sorbents, or other compatible substances.

### **CONSEQUENCE**

Once used, sorbent materials pose the same hazards as the spilled product. Their use adds to the overall volume of contaminated material.

### **MITIGATION**

Deplete accumulated liquid pools with pumps or vacuum trucks if possible before applying sorbents. Remove contaminated sorbents to safe storage by mechanical means.

### **TECHNIQUE**

**MECHANICAL REMOVAL** . . . Soil contaminated with spilled material may be removed by shovels, as well as a variety of heavy equipment such as backhoes and loaders.

### **CONSEQUENCE**

Mechanical equipment used in clean-up operations may become contaminated and present a safety and/or health hazard to response personnel. Any flammable vapors present in the area may be ignited by motorized removal equipment.

### **MITIGATION**

Use equipment constructed of materials compatible with the spilled product. Decontaminate equipment. Continually monitor for presence of flammable vapors.

## **WATER SPILL**

### **TECHNIQUE**

**STOP USE** . . . Notify downstream industrial, municipal and public users to stop water intake or to monitor water for contamination.

### **CONSEQUENCE**

Alternative water supplies may be needed to be established. Consult environmental specialists for assistance, as needed.

### **MITIGATION**

Provide alternative water supplies as needed until water supply is declared safe.

### **TECHNIQUE**

**FLOATING BOOMS/BARRIERS** . . . Oil spill confinement booms of compatible material may be deployed. Alternatively, mesh or nets may be strung across stream and anchored every 6-8 feet. Straw or peat placed on upstream side of mesh should absorb and retard spreading of spilled product.

### **CONSEQUENCE**

Leakage may occur under or through barrier if high waves or current present or if not properly deployed. Incompatible materials may be damaged by spilled product. Booms, barrier materials, and deployment equipment may be contaminated. Fire hazards pose risk to response personnel and equipment.

### **MITIGATION**

Proceed with caution. Stage barriers in series where necessary. Recover spilled product as soon as possible. Decontaminate equipment after use. Dispose of waste materials in proper and safe manner. Use compatible equipment. Eliminate ignition sources.

# PETROLEUM CRUDE OIL

## Class 3 (Flammable Liquid) or Combustible Liquid

### **TECHNIQUE**

**WATER UNDER-FLOW DAMS . . .** Streams may be provided with an under-flow dam. This is a dam made of compacted earth, clay, or other material with open tubes or pipes passing through under water. Upstream ends of pipes or tubes should be well below the layer of floating contaminant. Downstream ends should be at a higher elevation but still below the floating layer. Valves may be installed on downstream ends to control water flow.

### **CONSEQUENCE**

Earthen dams may become saturated with water and seep through or collapse. An insufficient number of under-flow tubes or pipes or additional water may cause overflow.

### **MITIGATION**

Use sufficient number and capacity of tubes or pipes. Be alert for conditions that may lead to overflow, saturation or dam collapse. Remove spilled product as soon as possible.

### **TECHNIQUE**

**DIVERSION . . .** Where other means are unavailable, floating slicks may be temporarily herded, diverted, or controlled using water hose streams, small boat propeller wash or chemical surface tension modifiers known as spill herders.

### **CONSEQUENCE**

Hose streams and propeller washes have limited applicability and effectiveness. The latter may cause undesired mixing of spilled product and water due to extreme agitation. Chemical spill herders should not be used until approval is obtained from authorized environmental officials.

### **MITIGATION**

Use other means if available.

### **TECHNIQUE**

**SURFACE SKIMMING . . .** Oil spill skimming devices may be deployed to recover floating petroleum crude oil.

### **CONSEQUENCE**

Incompatible equipment may be damaged. Equipment may be contaminated and pose hazard to future users. Fire hazard may pose risk to response personnel and equipment.

### **MITIGATION**

Decontaminate equipment after use. Use compatible equipment. Store recovered product in safe and secure location. Eliminate ignition sources.

### **TECHNIQUE**

**ABSORPTION . . .** Straw, hay, peat, or commercial sorbent materials compatible with petroleum crude oil may be used to absorb spilled product from the water surface, preferably after the spill has been confined.

### **CONSEQUENCE**

Once used, sorbent materials pose the same hazards as the spilled product. Their use adds to the overall volume of contaminated material. Deployment and recovery can be difficult. Fire hazards pose risk to response personnel and equipment.

### **MITIGATION**

Deplete accumulated liquid pools with pumps or vacuum trucks if possible before applying sorbents. Decontaminate equipment after use. Store and dispose of waste materials in proper and safe manner. Use compatible equipment. Eliminate ignition sources.