



Date: September 8, 2015

Regarding: **Metal Theft Claims and Questionable Claim Referrals from January 1, 2012 through December 31, 2014**

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This *ForeCAST*<sup>SM</sup> report analyzes copper, bronze, brass, and aluminum theft claims identified in Insurance Services Office (ISO) ClaimSearch and NICB Questionable Claim referrals (QCs) from January 1, 2012 to December 31, 2014 in order to identify any trends or patterns that may exist in the data.

## Executive Summary

There were a total of 39,993 claims for the theft of copper, bronze, brass, or aluminum submitted to ISO ClaimSearch between January 1, 2012 and December 31, 2014. Of the 39,993 total claims, the vast majority (98%) pertained to the theft of copper. Of these claims, 53% were on personal policies, while 47% were on commercial policies. When the number of metal theft claims and copper prices are compared, a statistically significant positive correlation was found to exist<sup>1</sup>.

While the number of metal theft claims was increasing from 2006 through 2011, in 2012 the number of claims leveled off, and in 2013 and 2014 has been decreasing. In general, the number of claims was seen to decrease in summer months, and increase in winter months, with spikes in claims in January and October.

A total of 403 NICB QCs were identified as involving the theft of copper, aluminum, brass, or bronze. Of the 403 total QCs, 95% pertained to the theft of copper. There were 296 QCs (73%) on personal policies, while 102 (25%) were on commercial policies<sup>2</sup>.

Ohio was identified as the loss state with the most metal theft claims in ISO ClaimSearch, with 60% more claims than Pennsylvania, the state with the 2nd largest number of claims. Ohio also had the highest rate of claims per capita. However, in metal theft QCs Ohio ranked 4th, while New York ranked 1st.

The New York-Newark-Jersey City, NY-NJ-PA Core Based Statistical Area (CBSA)<sup>3</sup> ranked 1st in ISO ClaimSearch metal theft claims from 2012 through 2014. The Dallas-Fort Worth-Arlington, TX CBSA had the largest number of metal theft-related NICB QCs.

<sup>1</sup> The Pearson's correlation coefficient between the number of metal theft claims per month and the average monthly copper price was .609 (significant at the .01 level).

<sup>2</sup> 5 QCs did not list a policy type.

<sup>3</sup> Core Based Statistical Areas (CBSAs) are defined by the United States Office of Management and Budget. CBSAs consist of a core urban area with a population of at least 10,000 and the surrounding communities that have strong economic and social ties to the core area.

## Metal Theft Overview

Law enforcement agencies across the country and around the globe started seeing increased numbers of thefts of metals such as copper, bronze, brass, and aluminum in the years leading up to the recent economic downturn. Copper prices were at record highs, increasing the attractiveness of the metal as a target for theft. Thieves have been willing to go to almost any length to obtain the metal. They have stripped sheets of metal from building rooftops, stolen memorial decorations from cemeteries, ripped apart air conditioners for the copper coils within, and stripped homes and buildings of wiring and piping. Construction sites are frequent victims because metal is often left on site unguarded and relatively unsecured. Farm equipment such as irrigation pipes and fixtures are also targeted. The thieves can endanger the safety of themselves and those in the surrounding community, and weaken the infrastructure vital to our everyday lives. Unoccupied buildings have exploded due to gas lines being stolen. Stretches of highway have been left dark and tornado warning sirens have been rendered inoperable due to wiring being stolen. Thieves have removed wiring from traffic and railway signals and even posed as utility workers in order to remove large sections of thick utility cable from the sewers beneath city streets. In May of this year, the theft of copper cables in the New York subway system caused shutdowns and delays on 2 subway lines. Some thieves have been electrocuted trying to steal live electrical wiring.

The damage caused by such thefts is often several times the value of the metal stolen, leaving the victims with hefty repair costs which are then often passed on to insurance companies. The U.S. Department of Energy has estimated that metal theft costs U.S. businesses around \$1 billion a year<sup>4</sup>. Some states and cities have taken measures to combat metal theft, such as requiring scrap yards to check identification of any individual who sells them scrap metal, note the license plate of the vehicle used to transport the metal, maintain the information on file, pay the seller with check instead of cash, or retain the scrap metal for a designated amount of time to allow law enforcement an opportunity to identify stolen materials before it is recycled. However, identifying stolen metal is not always possible and opposition to these laws from the scrap industry has made it difficult to get effective measures passed in some areas. Even in areas where such laws exist, some unscrupulous scrap dealers may not abide by them and enforcement of the laws has not always been a major priority until recent years when increases in metal thefts brought more attention to the problem. Some states and local governments have increased the penalties associated with metal theft or are charging thieves with additional crimes if the theft caused damage to infrastructure or created a hazard to the public. On the federal level, a bill was introduced to Congress in 2013 that would make certain cases of metal theft a federal crime, such as thefts that affect infrastructure, and incorporates some of the approaches just mentioned, but it has not been passed. However, the recent theft from the New York subways has renewed calls for federal legislation.

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<sup>4</sup> (US Dept. of Energy, 2007)

## Metal Theft Claims in ISO ClaimSearch

This section of the report analyzes the claims identified in ISO ClaimSearch as involving the theft of copper, aluminum, brass, or bronze. ISO ClaimSearch is a database designed to help insurers, self-insurers, law enforcement agencies, and state fraud bureaus detect and prevent fraud, evaluate risk, and process meritorious claims by providing a central repository of claims. Insurers and other agencies with access can query this database to research prior loss histories, identify claims patterns, and detect suspect claims.

A total of 39,993 claims for the theft of copper, bronze, brass, or aluminum were identified in ISO ClaimSearch between January 1, 2012 and December 31, 2014<sup>5</sup>. Of the 39,993 total claims, 38,985 (98%) related to copper, 717 (2%) to aluminum, 254 (1%) to brass, and 182 (1%) to bronze<sup>6</sup>. There were 18,912 claims on commercial policies (47%), while 21,076 (53%) were on personal policies<sup>7</sup>.

The following tables show the number of claims containing common keywords identified in the data<sup>8</sup> and the number of claims relating to each metal:

Common Keywords	2012-2014 Claims
"pipe" or "piping"	8,787
"wire" or "wiring"	6,370
"a/c" or " ac " or "air cond"	5,714
"plumbing"	5,666
"line"	1,806
"tube" or "tubing"	616
"gutter" or "spout"	438
"roof"	428
"coil"	357

Metal Type	2012-2014 Claims
Copper	38,985
Aluminum	717
Brass	254
Bronze	182

<sup>5</sup> There is no exact method for extracting metal theft claims from ISO ClaimSearch. For this report, a claim was determined to be a metal theft claim if the loss description for the claim contained "cop", "brass", "bronz", or "alum", as well as either: a) one of the terms "stole", "theft", "thief", "thieves", "took", "steal", "miss", "cut", "rip", "gone", "remov", "burg", or "vand" is in the loss description; or b) the loss type is theft, burglary, or vandalism related. Policy and loss types that were found to be likely to include unrelated claims were examined and cleaned of false positives, as well as claims that contained terms found to likely result in false positives, e.g. "Copperas Cove" or "Copperate".

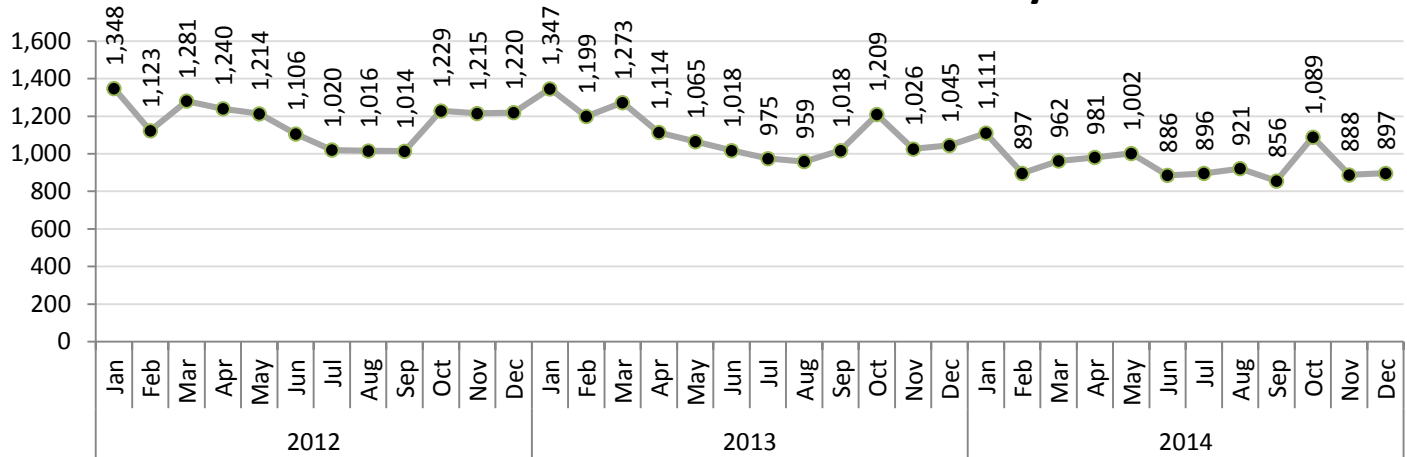
<sup>6</sup> Some claims contained more than one of the metal terms.

<sup>7</sup> 5 claims listed policy types that could not be identified as either commercial or personal in nature.

<sup>8</sup> Some claims may contain more than one of the keywords identified, while others may not contain any.

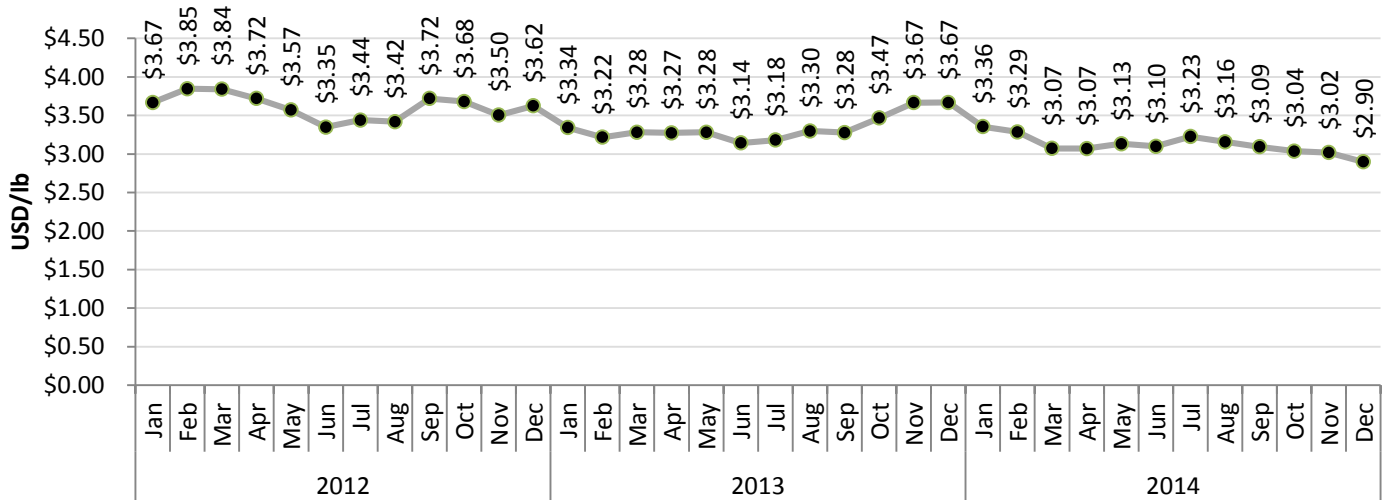
The following chart shows the number of metal theft claims that occurred per month from January 1, 2012 through December 31, 2014. It should be noted that there is often a delay before claims are entered into ISO ClaimSearch<sup>9</sup>. Claims that occurred in 2014 and earlier but were entered in the 1<sup>st</sup> quarter 2015 are included in the following chart to minimize the impact of these delays, however some months may still be underrepresented in the data, particularly the final months.

### Metal Theft Claims in ISO ClaimSearch by Month



When compared with the graph of copper prices for the same time period a statistically significant positive correlation between metal prices and the number of metal theft claims was found to exist<sup>10</sup>.

### COMEX Copper Price Monthly Averages

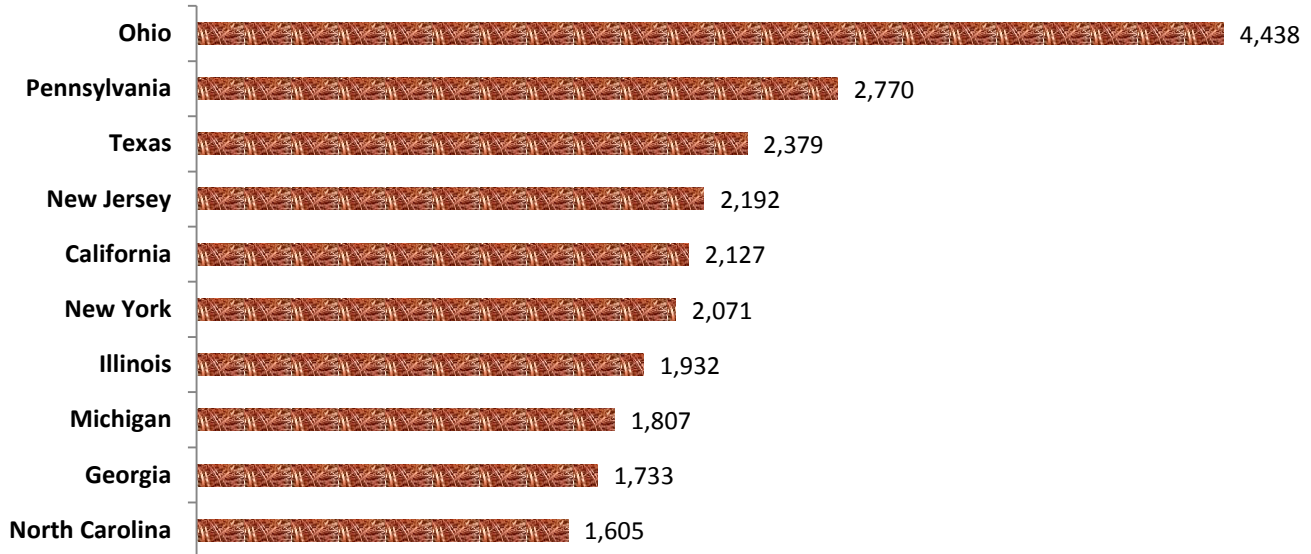


<sup>9</sup> Note: There was an average delay of 106 days between a claim occurring and it being entered into ISO ClaimSearch, therefore the last months of the data are likely underreported. Of the metal thefts reported between 1/1/2012 and 3/31/2015, 3,141 had dates of loss prior to 1/1/2012 and were not included in the graph.

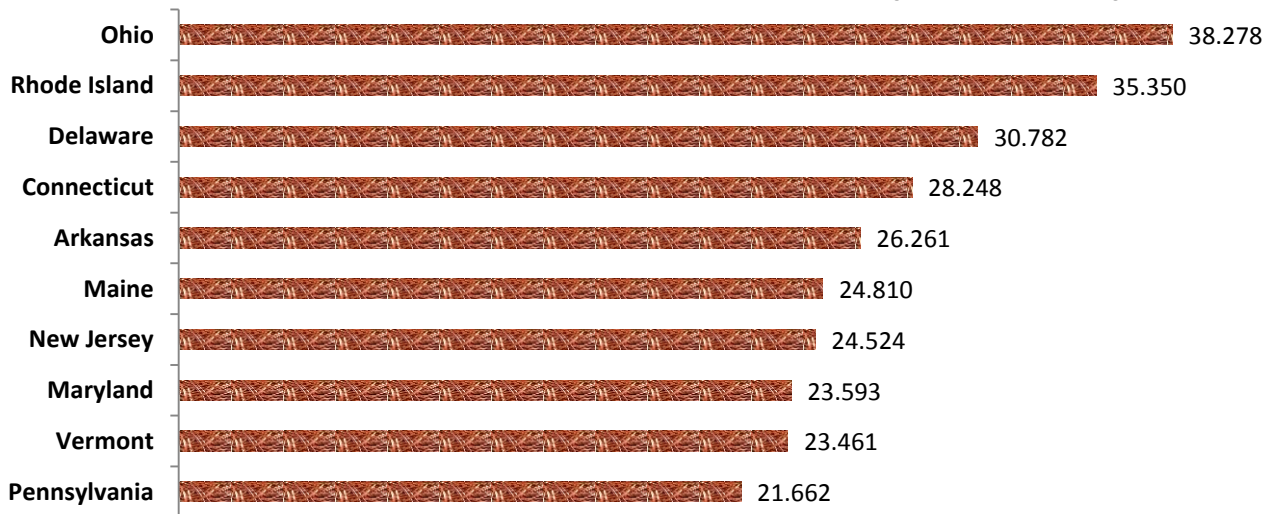
<sup>10</sup> Copper price data was obtained from <http://www.iwgcopper.com/price-history>. The Pearson's correlation coefficient between the number of metal theft claims per month and the average monthly copper price was .609 (significant at the .01 level).

The following charts show the 10 loss states associated with the most metal theft claims in ISO ClaimSearch, both by simple number of claims and by number of claims per 100,000 residents<sup>11</sup>:

### Ten States with Most Metal Theft Claims in ISO ClaimSearch (2012-2014)



### Ten States with Most Metal Theft Claims in ISO ClaimSearch Per 100,000 Residents (2012-2014)



Ohio was the state with the greatest number of metal theft claims in ISO ClaimSearch, followed by Pennsylvania and Texas. When ranked by claims per 100,000 residents, Ohio remains the top state, but Rhode Island and Delaware rank 2<sup>nd</sup> and 3<sup>rd</sup>. Ohio, Pennsylvania, and New Jersey appear in both charts.

<sup>11</sup> Note: 22 claims either did not have the loss state field populated, or it was populated with invalid entries / locations outside the US.

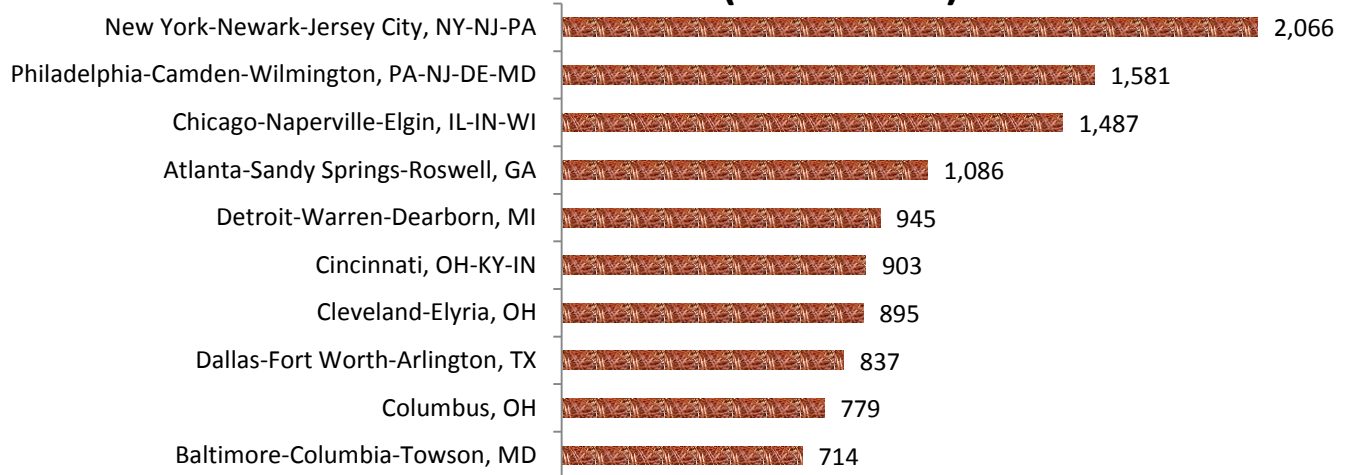
The following table, in alphabetical order by state, shows the number of claims per state for all 50 states and the District of Columbia, as well as the number of claims per 100,000 residents:

State	Population <sup>12</sup>	Claims	Claims / 100,000 Residents	Rank by Number of Claims	Rank by Claims / 100,000 Residents
Alabama	4,849,377	635	13.094	21	23
Alaska	736,732	8	1.086	48 (tie)	48
Arizona	6,731,484	673	9.998	18	27
Arkansas	2,966,369	779	26.261	17	5
California	38,802,500	2127	5.482	5	40
Colorado	5,355,866	336	6.273	30	37
Connecticut	3,596,677	1016	28.248	15	4
Delaware	935,614	288	30.782	34 (tie)	3
District of Columbia	658,893	87	13.204	43	22
Florida	19,893,297	1282	6.444	12	36
Georgia	10,097,343	1733	17.163	9	13
Hawaii	1,419,561	28	1.972	45	44
Idaho	1,634,464	26	1.591	46	46
Illinois	12,880,580	1932	14.999	7	17
Indiana	6,596,855	1027	15.568	14	15
Iowa	3,107,126	246	7.917	36	33
Kansas	2,904,021	322	11.088	32	25
Kentucky	4,413,457	657	14.886	19	19
Louisiana	4,649,676	288	6.194	34 (tie)	39
Maine	1,330,089	330	24.810	31	6
Maryland	5,976,407	1410	23.593	11	8
Massachusetts	6,745,408	1009	14.958	16	18
Michigan	9,909,877	1807	18.234	8	11
Minnesota	5,457,173	390	7.147	24	35
Mississippi	2,994,079	139	4.642	41	42
Missouri	6,063,589	1103	18.191	13	12
Montana	1,023,579	15	1.465	47	47
Nebraska	1,881,503	165	8.770	39	32
Nevada	2,839,099	389	13.702	25	21
New Hampshire	1,326,813	202	15.224	38	16
New Jersey	8,938,175	2192	24.524	4	7
New Mexico	2,085,572	307	14.720	33	20
New York	19,746,227	2071	10.488	6	26
North Carolina	9,943,964	1605	16.140	10	14
North Dakota	739,482	8	1.082	48 (tie)	49
Ohio	11,594,163	4438	38.278	1	1
Oklahoma	3,878,051	365	9.412	27 (tie)	29
Oregon	3,970,239	65	1.637	44	45
Pennsylvania	12,787,209	2770	21.662	2	10
Rhode Island	1,055,173	373	35.350	26	2
South Carolina	4,832,482	452	9.353	23	30
South Dakota	853,175	7	0.820	50	51
Tennessee	6,549,352	628	9.589	22	28
Texas	26,956,958	2379	8.825	3	31
Utah	2,942,902	105	3.568	42	43
Vermont	626,562	147	23.461	40	9
Virginia	8,326,289	654	7.855	20	34
Washington	7,061,530	365	5.169	27 (tie)	41
West Virginia	1,850,326	226	12.214	37	24
Wisconsin	5,757,564	359	6.235	29	38
Wyoming	584,153	6	1.027	51	50

<sup>12</sup> US Census Bureau - Annual Estimates of the Population for the United States, Regions, States, and Puerto Rico: April 1, 2010 to July 1, 2014

The following chart shows the 10 CBSAs with the most metal theft claims in ISO ClaimSearch<sup>13</sup>:

### Ten CBSAs with Most Metal Theft Claims in ISO ClaimSearch (2012-2014)



The New York-Newark-Jersey City, NY-NJ-PA CBSA has the largest number of metal theft claims from 2012-2014, followed by the Philadelphia-Camden-Wilmington, PA-NJ-DE-MD and Chicago-Naperville-Elgin, IL-IN-WI CBSAs.

<sup>13</sup> Note: 4,461 metal theft claims, 11% of the total number, either did not list a loss city or listed one that is not included in a CBSA.



## Metal Theft Claims Submitted as NICB Questionable Claim Referrals

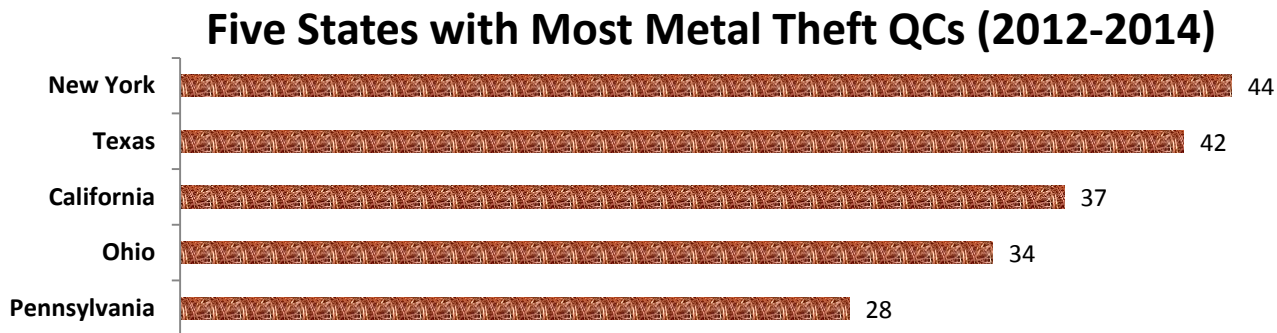
NICB member companies can submit claims that they believe may contain some element of fraud to NICB as Questionable Claim referrals (QCs). This section of the report analyzes the QCs identified as involving the theft of copper, brass, bronze, or aluminum. There were a total of 403 metal theft QCs submitted between January 1, 2012 and December 31, 2014<sup>14</sup>. Of the 403 total QCs, 384 (95%) were related to copper, 18 (5%) to aluminum, 5 (1%) to bronze, and 5 (1%) to brass<sup>15</sup>. There were 296 QCs (73%) on personal policies, while 102 (25%) were on commercial policies<sup>16</sup>.

The QC data was queried further to determine which types of items were most commonly stolen. The following tables show the number of claims containing common keywords identified in the data<sup>17</sup> and the number of QCs relating to each metal:

Common Keywords	2012-2014 QCs
“pipe” or “piping”	179
“wire” or “wiring”	115
“a/c” or “ ac ” or “air cond”	63
“plumbing”	61
“line”	61
“roof”	61
“tube” or “tubing”	14

Metal Type	2012-2014 QCs
Copper	384
Aluminum	18
Bronze	5
Brass	5

The following chart shows the 5 loss states associated with the most metal theft QCs:



New York was the state of loss in the largest number of metal theft related NICB QCs, followed by Texas and California.

<sup>14</sup> There is no exact method for extracting metal theft QCs. For this report, a QC was determined to be a metal theft claim if the loss description for the claim contained “cop”, “brass”, “bronz”, or “alum”, as well as either: a) one of the terms “stole”, “theft”, “thief”, “thieves”, “took”, “steal”, “miss”, “cut”, “rip”, “gone”, “remov”, “burg”, or “vand” is in the loss description; or b) the loss type is theft, burglary, or vandalism related. The resulting dataset was examined and false positives were removed.

<sup>15</sup> Some claims contained more than one of the metal terms.

<sup>16</sup> 5 QCs did not list a policy type.

<sup>17</sup> Some QCs may contain more than one of the keywords listed, while others may not include any.



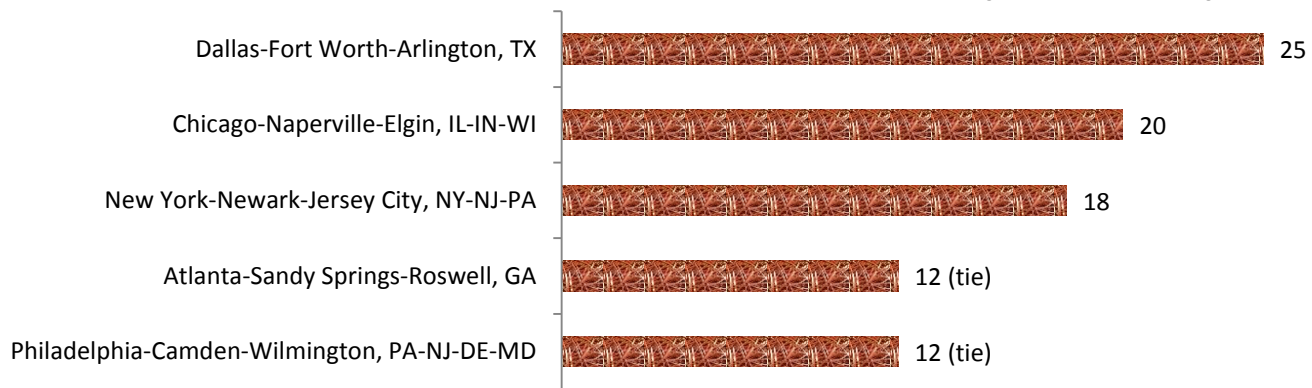
The following table shows the number of QCs for all 50 states and the District of Columbia, as well as the ratio of QCs to every 1,000 ISO ClaimSearch metal theft claims.

State	QCs	ISO Claims	QCs / 1,000 Claims	Rank by # of QCs	Rank by QCs / 1,000 Claims
Alabama	16	635	25.20	7	3
Alaska	0	8	0.00	43 (tie)	43 (tie)
Arizona	10	673	14.86	14	9
Arkansas	5	779	6.42	19 (tie)	31
California	37	2,127	17.40	3	6
Colorado	3	336	8.93	26 (tie)	20
Connecticut	4	1,016	3.94	22 (tie)	38
Delaware	2	288	6.94	31 (tie)	28
District of Columbia	0	87	0.00	43 (tie)	43 (tie)
Florida	9	1,282	7.02	15	27
Georgia	15	1,733	8.66	8 (tie)	21
Hawaii	0	28	0.00	43 (tie)	43 (tie)
Idaho	0	26	0.00	43 (tie)	43 (tie)
Illinois	24	1,932	12.42	6	11
Indiana	11	1,027	10.71	13	15
Iowa	0	246	0.00	43 (tie)	43 (tie)
Kansas	1	322	3.11	33 (tie)	40
Kentucky	1	657	1.52	33 (tie)	42
Louisiana	0	288	0.00	43 (tie)	43 (tie)
Maine	1	330	3.03	33 (tie)	41
Maryland	15	1,410	10.64	8 (tie)	16
Massachusetts	4	1,009	3.96	22 (tie)	37
Michigan	13	1,807	7.19	11 (tie)	25 (tie)
Minnesota	5	390	12.82	19 (tie)	10
Mississippi	1	139	7.19	33 (tie)	25 (tie)
Missouri	13	1,103	11.79	11 (tie)	12
Montana	1	15	66.67	33 (tie)	1
Nebraska	1	165	6.06	33 (tie)	33
Nevada	6	389	15.42	16 (tie)	7
New Hampshire	1	202	4.95	33 (tie)	35
New Jersey	14	2,192	6.39	10	32
New Mexico	3	307	9.77	26 (tie)	18
New York	44	2,071	21.25	1	4
North Carolina	6	1,605	3.74	16 (tie)	39
North Dakota	0	8	0.00	43 (tie)	43 (tie)
Ohio	34	4,438	7.66	4	24
Oklahoma	4	365	10.96	22 (tie)	13
Oregon	1	65	15.38	33 (tie)	8
Pennsylvania	28	2,770	10.11	5	17
Rhode Island	2	373	5.36	31 (tie)	34
South Carolina	3	452	6.64	26 (tie)	30
South Dakota	0	7	0.00	43 (tie)	43 (tie)
Tennessee	5	628	7.96	19 (tie)	23
Texas	42	2,379	17.65	2	5
Utah	3	105	28.57	26 (tie)	2
Vermont	1	147	6.80	33 (tie)	29
Virginia	6	654	9.17	16 (tie)	19
Washington	4	365	10.96	22 (tie)	14
West Virginia	1	226	4.42	33 (tie)	36
Wisconsin	3	359	8.36	26 (tie)	22
Wyoming	0	6	0.00	43 (tie)	43 (tie)

Montana, despite having only 1 metal theft QC submission 2012-2014, had the highest proportion of NICB QCs to the total number of metal theft claims in ISO ClaimSearch, followed by Utah, Alabama, New York, and Texas.

The following chart shows the 5 CBSAs in the most metal theft QCs<sup>18</sup>:

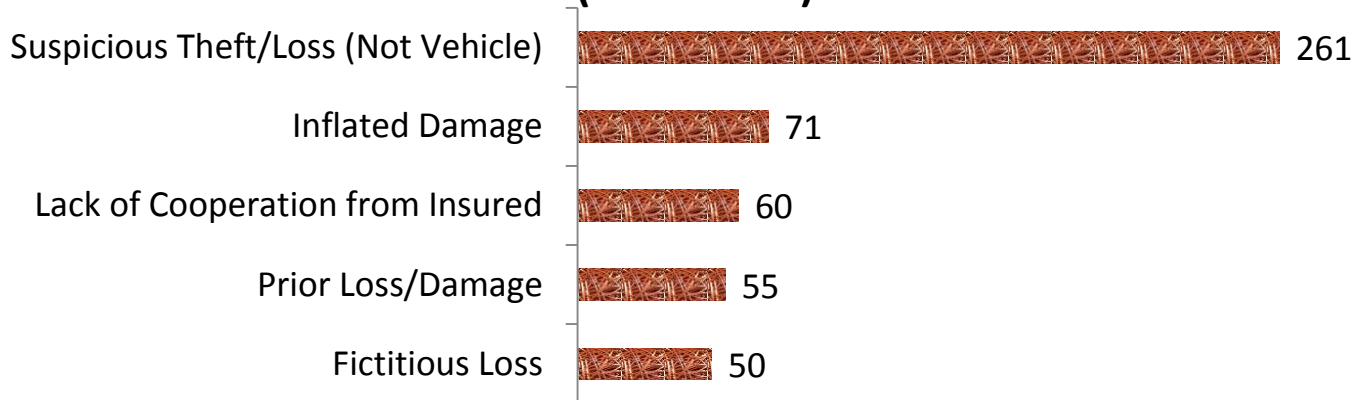
### Five CBSAs with Most Metal Theft QCs (2012-2014)



Dallas-Fort Worth-Arlington, TX was the CBSA with the greatest number of metal theft QCs, followed by Chicago-Naperville-Elgin, IL-IN-WI and New York-Newark-Jersey City, NY-NJ-PA.

NICB QCs can each list up to 7 referral reasons, allowing member companies to indicate what aspects of the claim led to it being submitted to the NICB as a QC. There were a total of 765 referrals reasons included in the 403 metal theft QCs from 2012 to 2014. The following chart shows the 5 referral reasons included most often in these QCs:

### Five Referral Reasons with Most Metal Theft QCs (2012-2014)



Suspicious Theft/Loss (Not Vehicle) was the referral reason indicated in the greatest number of metal theft QCs, appearing in 65% of the metal theft QCs from 2012-2014.

<sup>18</sup> Note: 32 metal theft QCs either did not list a loss city or listed one that is not included in a CBSA.

## Conclusions

There were a total of 39,993 claims for the theft of copper, bronze, brass, or aluminum submitted to ISO ClaimSearch between January 1, 2012 and December 31, 2014. Of the 39,993 total claims, 98% pertained to the theft of copper. Of the claims 53% were on personal policies, while 47% were on commercial policies. When the number of metal theft claims and copper prices are compared, a statistically significant positive correlation was found to exist<sup>19</sup>.

A total of 403 NICB QCs were identified as involving the theft of copper, aluminum, brass, or bronze. Of the 403 total QCs, 95% pertained to the theft of copper. There were 296 QCs (73%) on personal policies, while 102 (25%) were on commercial policies<sup>20</sup>.

While the number of claims was increasing from 2006 to 2011, in 2012 the number of claims leveled off, and in 2013 and 2014 the number of claims has been decreasing. In general, the number of claims was seen to decrease in summer months, and increase in winter months, with spikes in claims in January and October. The spikes in January are followed by decreases in February.

Ohio was identified as the loss state with the most metal theft claims in ISO ClaimSearch, with 60% more claims than Pennsylvania, the state with the 2nd largest number of claims. Ohio also had the highest rate of claims per capita. However, in QCs Ohio ranked 4th, while New York topped the rankings.

The New York-Newark-Jersey City, NY-NJ-PA Core Based Statistical Area (CBSA) ranked 1st in ISO ClaimSearch metal theft claims from 2012 to 2014. The Dallas-Fort Worth-Arlington, TX CBSA had the largest number of ISO ClaimSearch metal theft-related NICB QCs.

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<sup>19</sup> The Pearson's correlation coefficient between the number of metal theft claims per month and the average monthly copper price was .609 (significant at the .01 level).

<sup>20</sup> 5 QCs did not list a policy type.

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