South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4182
(909) 396-2000 • www.aqmd.gov

EMAILED and MAILED: September 8, 2016

September 9, 2016

Mr. Frank Mello, Vice President
Carlton Forge Works
7743 E. Adams Street
Paramount, CA 90723-4200

Subject: Approval of AB2588 Health Risk Assessment (HRA) for Carlton Forge Works (SCAQMD No.: 22911)

This letter provides approval of the Health Risk Assessment (HRA) submitted on October 28, 2014 by Carlton Forge Works pursuant to the Air Toxics "Hot Spots" Act (AB2588) and South Coast Air Quality Management District (SCAQMD) Rule 1402, including revisions made by SCAQMD staff (see files in attached disk for details). As noted in the HRA Summary Form (Attachment B) the risks posed by Carlton Forge Works are above the public notification thresholds specified in Rule 1402. Pursuant to Rule 1402 (p)(2) Carlton Forge Works will be required to notify the public within thirty (**30**) days of the approval of the HRA. As stated in SCAQMD's Public Notification Procedures[1], this notification includes both written notices sent through the US Mail, and a public meeting. Details regarding this HRA approval are below.

Background

In accordance with AB2588 and SCAQMD Rule 1402, SCAQMD staff notified Carlton Forge Works on March 21, 2014 that it must submit an HRA based on its 2012 Air Toxic Inventory Report (ATIR). The HRA prepared for this request was submitted on August 18, 2014, with a revised version submitted on October 28, 2014. This revised HRA was subsequently reviewed by SCAQMD staff and the Office of Environmental Health Hazard Assessment (OEHHA).

As you are aware, on March 6, 2015, the SCAQMD Governing Board directed staff to update its rules affected by the March 2015 update of the AB2588 risk assessment guidelines put forth by OEHHA[2], and to require all HRAs that had not yet been approved to use the revised methodology. SCAQMD has also updated its Rule 1402 on June 5, 2015 to implement the revised OEHHA guidelines. The updated OEHHA risk assessment guidelines incorporate recent scientific findings that show a greater impact on children from cancer causing compounds than previously considered. For Carlton Forge Works, an HRA using the new guidance results in an approximately five-fold increase in residential cancer risk compared to using the previous guidance, even at the same emissions level.

[1] http://www.aqmd.gov/docs/default-source/planning/risk-assessment/public-notification-procedures.pdf
[2] http://oehha.ca.gov/air/hot_spots/hotspots2015.html

Fugitive Emissions

In order to investigate air quality complaints alleging that Carlton Forge Works was the source of burning metallic odors, in mid-2013 District staff initiated an assessment of air quality in the Paramount area, including inspections of industrial facilities, placement of glass plates to collect dust particles, and placement of air quality monitors in multiple locations near Carlton Forge Works to measure the level of metals in air. The current status of this investigation is available on SCAQMD's website.[3] The air monitoring data available from this investigation is particularly useful for the AB2588 HRA submitted by Carlton Forge Works as the monitoring provides actual ambient levels of pollutants found in air, whereas the HRA is based on a modeling analysis. The monitoring data can therefore be used as an independent check to determine if the modeling analysis included all emission sources, including fugitive emissions (e.g., emissions not coming from a stack).

Although Carlton Forge was required to prepare its HRA using 2012 emissions, monitoring data was not available from that time period. District staff therefore reviewed the oldest data available, from August 8, 2013 through August 7, 2014, as part of its evaluation of the dispersion modeling analysis in the HRA. Importantly, early in this time period, CFW voluntarily installed controls to reduce fugitive emissions (that is, emissions not released through a stack) from its grinding operations. Some metals, such as nickel (a key component of some alloys processed by CFW), show a notable reduction in concentration at the same time that the fugitive emission controls were installed at CFW. This clear relationship (see graph in Attachment C) indicates that before controls were installed (e.g., in the 2012 base year), fugitive emissions from the grind shop were a much larger contributor to ambient pollutant levels measured at the nearby monitor than today.

The 2012 base year emission inventory included in CFW's submitted HRA does not take into account fugitive emissions, in particular from grinding operations. In order to account for the difference between the predicted modeling results and the levels of nickel found at the nearby monitors, District staff added a fugitive source located at CFW's grind shop into the dispersion model. In this analysis, all nickel found in this August 2013 through August 2014 time period of monitoring data, except for background levels found from the SCAQMD MATES study, were attributed to emissions from CFW (see table below).

Source of Nickel	Nickel Concentration at Monitor Across Vermont Avenue from Carlton Forge Works (ng/m3)
Predicted Level from Carlton Forge Works stacks from Dispersion Modeling in HRA	3.65
Expected Typical Ambient Level as Measured at Compton Station in MATES IV	4.06
Sub-Total	*7.71*
Average Concentration Measured from 8/8/13-8/7/14	18.75
Remaining Level of Nickel (Attributed to Fugitive Emissions from Carlton Forge Works)	11.04

[3] http://www.aqmd.gov/home/regulations/compliance/air-monitoring-activities

CFW has stated that they believe there are other sources of nickel and other metal emissions in the area that may be affecting monitored levels. However, while monitoring data is not available from 2012, the approximation of nickel emissions in this HRA approval is reasonable, especially considering the higher levels of nickel that were found just before the fugitive emission controls were added to CFW in 2013. In regards to other metals, such as hexavalent chromium and arsenic, these pollutants were also added to the fugitive source, at the same ratio to nickel as reported in the December 2013 source test provided by CFW (Tables 2.2 and 2.3 in Ambient Air Monitoring at Carlton Forge Works, May 2014). Other sampling data, including from a July 2013 source test[4] (Attachment A) and from dust collected on the roof of CFW have confirmed that arsenic and hexavalent chromium are associated with CFW's grinding operation and that it is appropriate to include them as pollutants coming from CFW's grinding operations as was done for this HRA approval.

SCAQMD is continuing to investigate metal emissions in the Paramount area, in particular with respect to hexavalent chromium (including with a new temporary monitor that CFW has allowed the District to place on its property). If there are additional sources of hexavalent chromium or other metals that have not yet been identified but are attributed to CFW in the future, the District will ask CFW to revise its emissions estimates and its HRA.

Next Steps

Risk Results & Public Notification

As summarized in Attachment B, several health risk endpoints exceed public notification thresholds specified in Rule 1402 (i.e., cancer risks greater than 10 per million and hazard indices greater than 1.0). In particular, the residential cancer risk (**15.4 per million**), the acute non-cancer hazard index (**1.76**) and the residential non-cancer chronic hazard index (**1.04**) exceed the public notification thresholds.

A map showing the areas with health risk levels that exceed public notification thresholds is attached to this letter (Attachment D). Therefore, Carlton Forge Works must conduct public notification within **30** days of approval of the HRA. Public Notice must cover all the residential and sensitive receptor addresses, and children in schools within any of the risk contours found in Attachment D and to all businesses with an acute hazard index greater than 1.

It is SCAQMD practice to post HRAs on its website once they are approved. If there is any business confidential information contained within your HRA, please let us know and provide us with a redacted version of the HRA as soon as possible. No confidential markings have been found on the HRA.

In addition, given the short timeframe for conducting public notification, please schedule a meeting soon with SCAQMD staff to discuss the next steps for public notification. If you have any questions regarding this letter please contact either myself, or Victoria Moaveni at (909) 396-2455.

[4] The quantified levels identified in this source test are not appropriate to use in the HRA as only one test run was conducted per device. Nonetheless, arsenic was detected in all three grinding room baghouse runs. Hexavalent chromium was not analyzed in the baghouse samples, but was analyzed and detected in dust samples collected from the grind shop roof near the downwind side of the roof vent.

Sincerely,

Ian MacMillan
Planning and Rules Manager

Attachment:

A. HRA files & 2013 Source Test Report on disk
B. HRA Summary Form
C. Graph of Nickel Levels Across Street from Carlton Forge
D. Public Notification Area Map

cc: Armando Bautista, Carlton Forge Works
Thomas R. Wood, Stoel Rives, LLP
Deborah Proctor, ToxStrategies, Inc.
Jeff Sickenger, KP Public Affairs
Phil Fine, SCAQMD
Jill Whynot, SCAQMD
Susan Nakamura, SCAQMD
Victoria Moaveni, SCAQMD
Allen Hoshik Yoo, SCAQMD

ATTACHMENT A

HRA files and July 2013 Source Test on disk

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ATTACHMENT B

HEALTH RISK ASSESSMENT SUMMARY FORM

Facility Name : **Carlton Forge Works**
Facility Address: **7743 E. Adams Street, Paramount, CA 90723**
Type of Business: **Metal Forging**
SCAQMD ID No.: **22911**
Inventory Reporting Year : **2012**

A. Cancer Risks

(One in a million means one chance in a million of getting cancer from being constantly exposed to a certain level of a chemical over a period of time)

1. Maximum Cancer Risks : *(Offsite and residence = 30-year exposure, worker = 25-year exposure)*
   a. Maximum Offsite* **20.2** in a million Location: Rec#93 (392474.7E; 3750986N)
   (Fenceline receptor assuming theoretical residential exposure)
   b. Residence **15.4** in a million Location: Rec #9 (392500E; 3751000N)
   c. Worker **1.1** in a million Location: Rec #269 (392331.7E; 3750991.2N)
2. Substances Accounting for 90% of Cancer Risk: **Nickel, Arsenic, Hexavalent Chromium**
   Processes Accounting for 90% of Cancer Risk: **Grinding Operation**
3. Cancer Burden for a 70-yr Exposure: *(Cancer Burden = [Cancer Risk] x [# of People Exposed to Specific Cancer Risk])*
   a. Cancer Burden
   b. Number of people exposed to 1> per million cancer risk for a 70-yr exposure
   c. Maximum distance to edge of 70-year, 1 x 10-6 cancer risk isopleth (meters) **1,000**

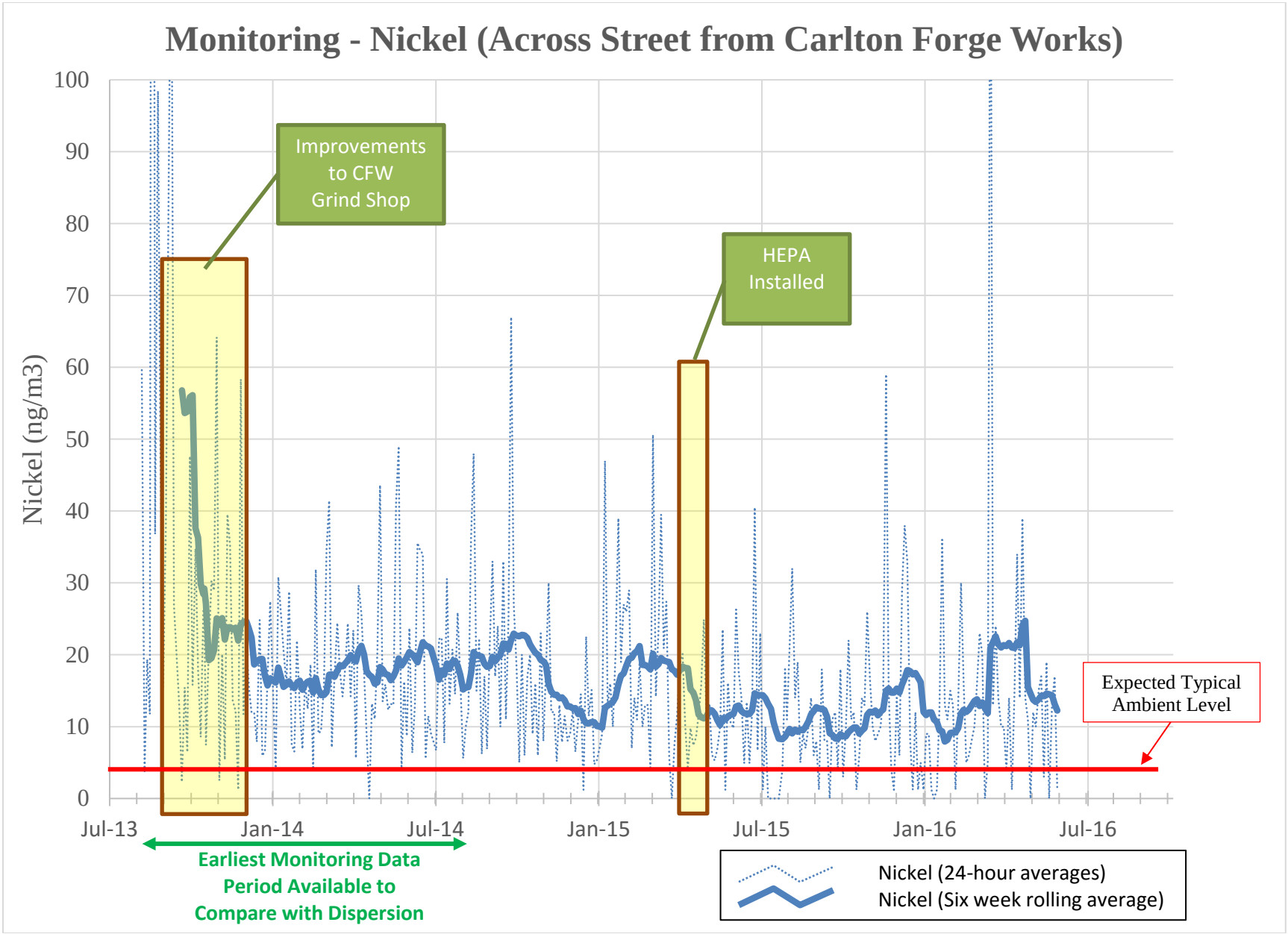
B. Non-Cancer Risks

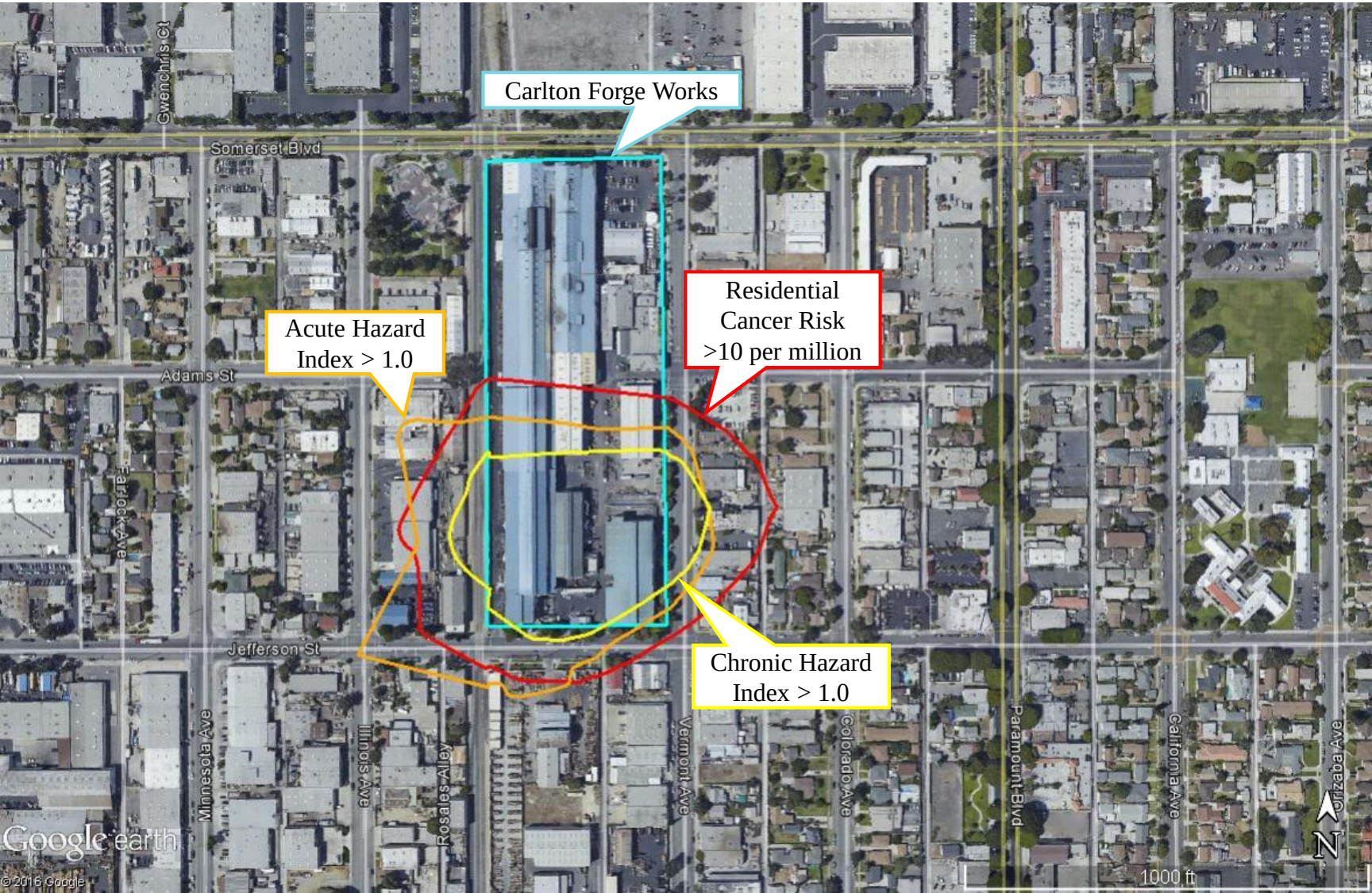
[Long Term Effects (chronic) and Short Term Effects (acute)]
(non-carcinogenic impacts are estimated by comparing calculated concentration to identified reference exposure levels, and expressing this comparison in terms of a "Hazard Index")

1. Maximum Non-Cancer Chronic Health Risks:
   a. Residence HI: **1.04** Location: Rec #9 (392500E; 3751000N) toxicological endpoint: **RESPIRATORY**
   b. Worker HI : **0.99** Location: Rec #269 (392331.7E; 3750991.2N) toxicological endpoint: **RESPIRATORY**
   c. Lead **0.01 ug/m3** Location: Maximum rolling 3-month average recorded at closest monitor *[Lead NAAQS = 0.15 ug/m3]*
2. Substances Accounting for 90% of Chronic Hazard Index: **Nickel, Arsenic**
3. Maximum 8-hour Chronic Hazard Index:
   8-Hour Chronic HI: **0.23** Location: Rec#93 (392474.7E; 3750986N) toxicological endpoint: **IMMUNE SYSTEM**
4. Substances Accounting for 90% of 8-hour Chronic Hazard Index: **Nickel, Manganese**
5. Maximum Acute Hazard Index:
   PMI: **1.76** Location: Rec#417 (392466.1E; 3751022.9N) toxicological endpoint: **IMMUNE SYSTEM**
6. Substances Accounting for 90% of Acute Hazard Index: **Nickel**

C. Public Notification and Risk Reduction

1. Public Notification Required? **Yes**
   a. If 'Yes', estimated population exposed to risks > 10 in a million for a 30-year exposure, or an HI >1: **<100**
2. Risk Reduction Required? **No**


Monitoring - Nickel (Across Street from Carlton Forge Works)
Nickel (ng/m3)
100
90
80
70
60
50
40
30
20
10
0
Jul-13
Jan-14
Jul-14
Jan-15
Jul-15
Jan-16
Jul-16
Improvements to CFW Grind Shop
HEPA Installed
Expected Typical Ambient Level
Earliest Monitoring Data Period Available to Compare with Dispersion
Nickel (24-hour averages)
Nickel (Six week rolling average)


Carlton Forge Works
Residential Cancer Risk >10 per million
Acute Hazard Index > 1.0
Chronic Hazard Index > 1.0
Gwenchris Ct
Somerset Blvd
Adams St
Jefferson St
Earlock Ave
Minnesota Ave
Illinois Ave
Rosales Alley
Vermont Ave
Colorado Ave
Paramount Blvd
California Ave
Orizaba Ave
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