UTILITY EMERGENCY AND MAINTENANCE PLAN
FORMER CARNOTITE REDUCTION COMPANY SITE
CHICAGO, ILLINOIS

The City of Chicago Department of Fleet and Facility Management (2FM) has prepared this utility emergency and maintenance plan (plan) in accordance with License Condition No. 6 listed in the Illinois Emergency Management Agency (IEMA) radioactive material license for the Former Carnotite Reduction Company (Carnotite) Site dated July 10, 2015. In addition to addressing utility emergencies within the license area, the plan also applies to excavation activities in the surrounding permit hold area designated by the City of Chicago to ensure no excavation occurs in these areas without appropriate notification of 2FM (see Attachment 1a for license and permit hold area locations). 2FM will notify IEMA of any intrusive activities conducted within the license or permit hold areas. This plan outlines soil management, radiological soil monitoring, and minimum health and safety procedures for utility and other excavation work conducted within the license and permit hold areas.

1.0 Site Background

The 7-acre former Carnotite site is located at 434 East 26th Street on the northern portion of the former Michael Reese Hospital campus in Chicago, Cook County, Illinois. The property is owned by the City of Chicago. The central and western portions of the site contain radium and uranium soil contamination believed to have resulted from Carnotite ore refining operations in the early 1900s. Radium and uranium contaminated soil has been documented in the license area beneath and in the vicinity of 26th Street from Martin Luther King Jr. Drive to Ellis Avenue. Total radium soil concentrations up to 3,670 picocuries per gram (pCi/g) and total uranium concentrations up to 1,181 pCi/g are present at depths ranging from 0 to 12 feet below ground surface, with the deepest contamination present in the northern portion of the license area along 26th Street.

2.0 Permit Hold Procedures and Applicability

Any City of Chicago or private entity performing underground work within the designated permit hold area, which includes the Carnotite license area, must submit a permit application to City of Chicago Department of Transportation's (CDOT) Office of Underground Coordination (for work requiring the opening of the public way) and/or Department of Buildings, as appropriate (see Attachment 1a for permit hold area location). 2FM will review the proposed scope of work, and with input from IEMA as needed, will determine if radiological monitoring is required during the work activity. 2FM also notifies the United States Environmental Protection Agency (EPA) of upcoming underground work and monitoring determinations. CDOT and City of Chicago Department of Water Management divisions that have the potential to conduct subsurface work have also been notified separately of these holds and been provided with the location of the license and permit hold areas. General permit hold procedures for City of Chicago and private utility and maintenance work are shown in Attachment 1a and permit hold forms are included in Attachment 1b.

3.0 Utility Emergencies and Maintenance within License Area

Excavation work within the Carnotite licensed area (see Attachment 1a for license area location) is limited to maintenance of existing utilities, including utility emergencies, in accordance with the radioactive material license until a Decommissioning Plan is approved by IEMA. All City and private utility work must follow (1) the reporting and related procedures detailed below; (2) monitoring and soil handling instructions detailed below and in Table 1; (3) general procedures for radiological monitoring of potentially contaminated soil included in Attachment 2, or equivalent; and (4) health and safety checklist procedures included in Attachment 3, or equivalent. A utility emergency contact list for the Carnotite site is included in Attachment 4.

In general, as part of the permit hold process, 2FM will utilize a contractor to conduct radiological monitoring and direct soil management for both City and private work conducted within the license area;

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Updated: 8/10/2016

however, for utility or other emergencies requiring any intrusive work within the license area that must begin prior to obtaining a permit, it is the responsibility of the city department or private utility conducting the work to supply a qualified contractor to be onsite to conduct radiological monitoring during the work until directed otherwise by 2FM or the City's associated radiation safety officer. If an emergency situation requires maintenance personnel to begin activities before the emergency response contractor and associated radiation safety officer (city work) or private radiological monitoring contractor (private work) arrive on site, the personnel must provide security to limit public access, minimize potential worker exposure, wear appropriate personal protective equipment, and use plastic sheeting to contain excavated soils and other potentially contaminated material and to prevent contact with surrounding soil until the material can be monitored and characterized. A complete list of minimum health and safety procedures is provided in the health and safety checklist in Attachment 3. A more detailed health and safety plan or procedures will be provided by the radiation safety officer upon arrival to the site, as needed.

For non-emergency utility maintenance or other intrusive activities, the City or private entity must obtain a permit from CDOT or the Department of Buildings, as appropriate, which will trigger the permit hold procedures described in Figure 1. Prior to excavation activities, the City's radiological contractor and associated radiation safety officer will be notified and will be on site to ensure compliance with soil management, monitoring, and health and safety requirements. This does not preclude private utility companies from providing their own contractor, in addition to the City's.

All soil excavated within the licensed area shall be returned to the excavation area, if possible. If the soil cannot be returned to the excavation, the soil shall be collected and stored within the license area in an appropriately labeled container such as a 55-gallon drum or roll-off container. Each container should be labeled with the generation date, source location, and gamma count rate range. 2FM, or an authorized representative, will designate an appropriate storage area for excavated soil. No soil may be transported offsite without advance approval from 2FM and IEMA. However, if soil is determined not to contain radium or uranium above background levels, the generator may be held accountable for disposal.

4.0 Excavation within Permit Hold Area outside of License Area

All City and private utility or other excavation work in public right of ways or City-owned property must follow (1) the monitoring and soil handling instructions in Table 1; (2) the general procedures for radiological monitoring of potentially contaminated soil included in Attachment 2, or equivalent; and (3) the health and safety checklist procedures included in Attachment 3, or equivalent. These procedures do not apply to private entities working on private properties within the permit hold area. Private entities working on private properties are not covered by this plan.

4.1 City Property and Public Right-of-Way/City Personnel and Contractors

For emergency and non-emergency situations requiring excavation on City-owned property within the permit hold area, including right-of-ways, by City of Chicago personnel or its representatives, the notification, radiological soil monitoring, and health and safety requirements are identical to those detailed in Section 3.0 for the license area. However, soil excavated within the permit hold area outside of the license area shall be considered free of radiological contamination unless surface gamma scans exceed twice the background count rate. Soil below the twice background count rate threshold may be disposed of without regard to radioactivity. Soil exceeding the twice the background count rate shall be placed back into the excavation, if possible. If the soil cannot be returned to the excavation, soil may be collected on plastic sheeting adjacent to the excavation in non-emergency situations for further characterization by the City's radiological contractor. In emergency situations, the soil that cannot be returned to the excavation shall be collected and stored within the license area in an appropriate container such as a 55-gallon drum or roll-off container, as approved by 2FM or an authorized representative. For non-emergency intrusive work, permits must be obtained, which will trigger the permit hold process and associated requirements.

4.2 City Property and Public Right-of-Way /Private Personnel

For emergency situations requiring excavation work on City property or public right-of-way within the permit hold area, private utility or other private personnel must provide their own radiological contractor for the duration of the work. Unless suspected contamination is identified, the City's contractor will not be dispatched. Appropriate permits must be obtained in non-emergency situations. For both emergency and non-emergency utility or other excavation work conducted by private entities on City-owned property and public right-of-way within the permit hold area, radiological soil screening and management procedures equivalent to those presented in Attachment 2 must be conducted by qualified personnel supplied by the private entity. Health and safety guidelines detailed in Attachment 3 should also be followed. Soil management requirements are identical to those outlined above for City personnel and contractors conducting work on City property and public right-of-way.

4.3 Private Property/Private Personnel

This plan does not apply to private entities working on privately-owned property within the permit hold area. However, radiological soil screening and management procedures presented in Attachment 2 and the health and safety guidelines detailed in Attachment 3 may become applicable in emergency and non-emergency situations, as appropriate and determined by IEMA and all required permits work must still be obtained from the City, as appropriate. A property owner may contact 2FM in order to determine if a planned activity may result in a need for monitoring.

5.0 Reporting

For all monitoring conducted pursuant to this plan, a written report shall be prepared that describes the work performed, location of excavation, instrumentation used, and all radiological data collected. The report is to be provided to 2FM within 2 weeks of project completion.

ATTACHMENTS

Attachment 1a – Permit Hold and License Areas – Former Carnotite Reduction Company

Attachment 1b – Permit Hold Forms

Attachment 2 - General Procedures for Radiological Monitoring of Potentially Contaminated Soil

Attachment 3 - Health and Safety Protocol Checklist, Utility Emergency and Maintenance

Attachment 4 – Utility Emergency Contact List

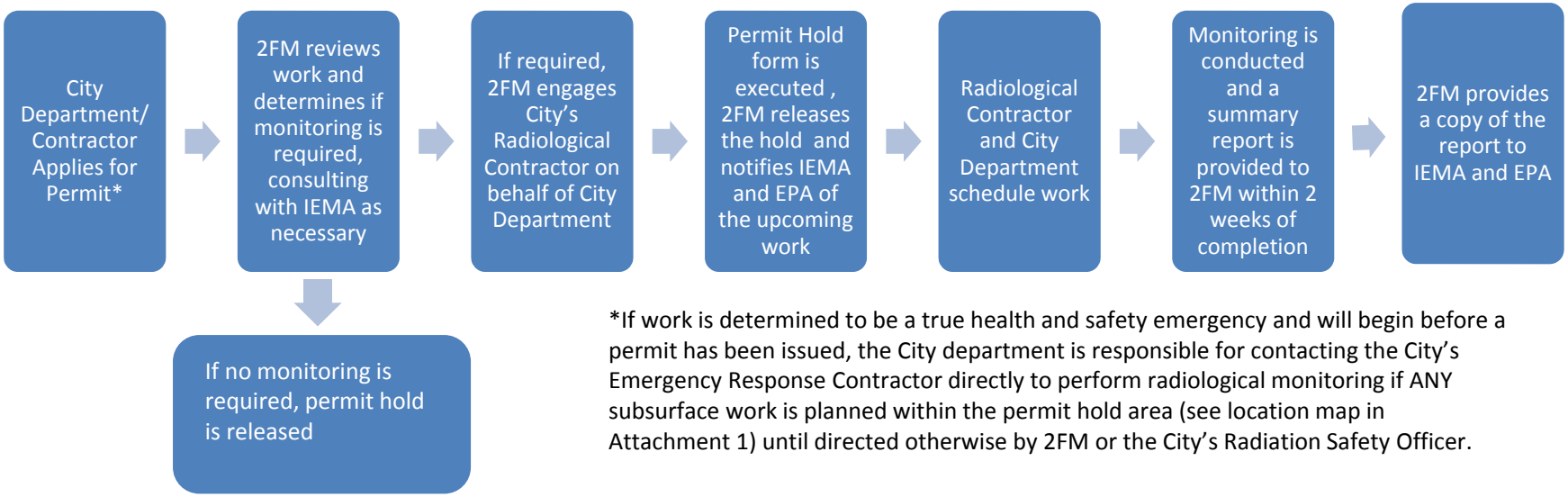
TABLE 1
MONITORING AND SOIL HANDLING INSTRUCTIONS
UTILITY EMERGENCY AND MAINTENANCE
FORMER CARNOTITE REDUCTION COMPANY SITE

Task	License Area – City Work (Emergency and Standard	License Area – Private Work (Standard)	License Area – Private Work (Emergency)	Outside License Area, City Property and Public Right-of-Way – City Work (Emergency and Standard)	Outside License Area, City Property and Public Right-of-Way – Private Work (Emergency and Standard)	Outside License Area, Private Property – Private Work* (Emergency and Standard)
Monitoring	**Emergency** – City's Emergency Response Contractor (engaged by either 2FM or directly by the City Department) **Standard** - City's Radiological Contractor (engaged by 2FM)	City's Radiological Contractor	Utility's Radiological Contractor as first responder if needed, followed by City's Radiological Contractor	City's Emergency Response Contractor	Utility's Radiological Contractor	Utility's Radiological Contractor
Soil Handling Instructions - <2x background	Place back in hole if possible. If not possible, collect and store within licensed area. No material can be removed without approval from the City's radiation safety officer.	Place back in hole if possible. If not possible, collect and store within licensed area. No material can be removed by the private company and without approval from the City's radiation safety officer.	Place back in hole if possible. If not possible, collect and store within licensed area. No material can be removed by the private company and without approval from the City's radiation safety officer.	No radiological handling restrictions	No radiological handling restrictions	No radiological handling restrictions
Soil Handling Instructions - >2x background**	Immediately contact 2FM and if possible, place back in hole. If not possible, collect and store within licensed area. No material can be removed from the site without approval from the City's radiation safety officer.	Immediately contact 2FM and if possible, place back in hole. If not possible, collect and store within licensed area. No material can be removed from the site by the private company and without approval from the City's radiation safety officer.	Immediately contact 2FM and if possible, place back in hole. If not possible, collect and store within licensed area. No material can be removed from the site by the private company and without approval from the City's radiation safety officer.	Immediately contact 2FM and if possible, place back in hole. Place on plastic sheeting or collect and store within licensed area, as approved by 2FM or authorized representative.	Immediately contact 2FM and if possible, place back in hole. Place on plastic sheeting or collect and store within licensed area, as approved by 2FM or authorized representative.	Place back in hole if possible, coordinate directly with IEMA.

*Not specifically covered by this plan; however, procedures would be similar to Private work on City property.
**As required on the permit hold forms, EPA must also be notified if material exceeding 2x background is encountered.

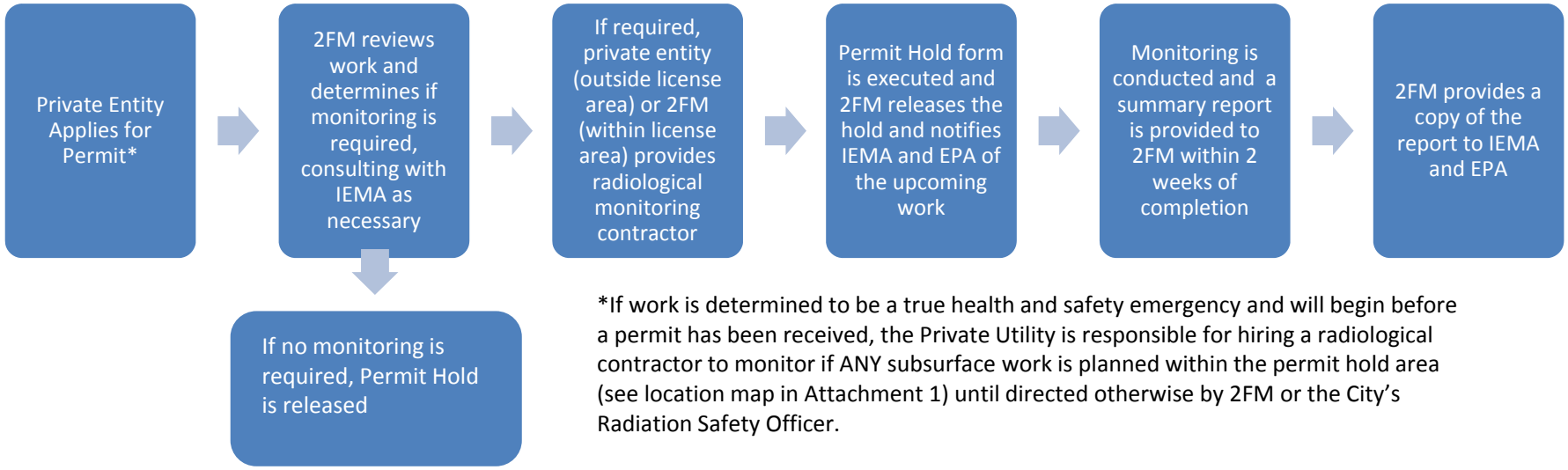
FIGURE 1 – GENERAL PERMIT HOLD PROCEDURES

City of Chicago Work



*If work is determined to be a true health and safety emergency and will begin before a permit has been issued, the City department is responsible for contacting the City's Emergency Response Contractor directly to perform radiological monitoring if ANY subsurface work is planned within the permit hold area (see location map in Attachment 1) until directed otherwise by 2FM or the City's Radiation Safety Officer.

Private Work



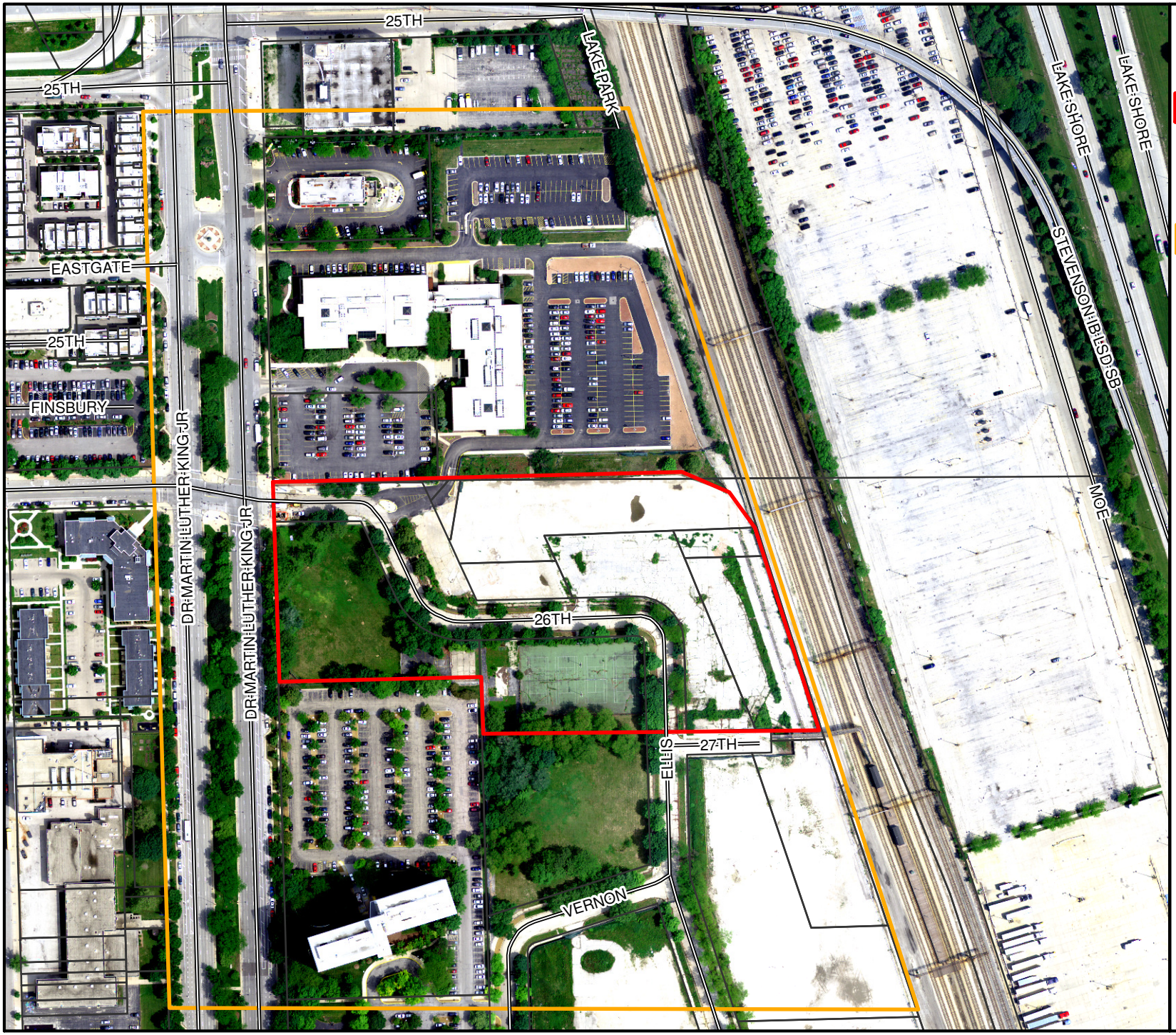
*If work is determined to be a true health and safety emergency and will begin before a permit has been received, the Private Utility is responsible for hiring a radiological contractor to monitor if ANY subsurface work is planned within the permit hold area (see location map in Attachment 1) until directed otherwise by 2FM or the City's Radiation Safety Officer.

ATTACHMENT 1a

FIGURE
PERMIT HOLD AND LICENSE AREAS
FORMER CARNOTITE REDUCTION COMPANY

(1 Sheet)

Permit Hold and License Areas - Former Carnotite Reduction Company



Legend

IEMA License Area for the Former Carnotite Reduction Company

Approximate Radiological Monitoring Review Area*

*Actual monitoring requirements will depend on the location and type of work.

Although it depends on each individual permit system, the area requiring review prior to subsurface work is generally represented by the below address ranges:

2500-2801 S. Martin Luther King Dr.
2600-2799 S. Ellis Ave.
2729-2800 S. Vernon Ave.
349-550 E. 26th St.
500-599 E. 27th St.

City of Chicago
Rahm Emanuel, Mayor

David J. Reynolds
Commissioner

7/22/16

ATTACHMENT 1b

PERMIT HOLD FORMS

(2 Sheets)

DEPARTMENT OF FLEET AND FACILITY MANAGEMENT

CITY OF CHICAGO

FORM NO. 2FM.RADIUM.ROW.06 (CARNOTITE Right-of-Way and City-Owned Property)

Notice is hereby given that environmental contamination associated with the former Carnotite Reduction Company (Carnotite) site may be present within or near the location for which you have requested a permit. Proper safeguards must be employed when performing work at this site in order to avoid potential threats to human health and safety and the environment. The Illinois Emergency Management Agency (IEMA) is the lead regulatory agency for contamination associated with the Carnotite site.

A file containing detailed information regarding the environmental contamination which may be present in the vicinity of the proposed work location is available for review at the City of Chicago Department of Fleet and Facility Management (2FM) at 30 N. LaSalle St., 3rd Floor, Chicago, Illinois 60602 during normal business hours (8:30AM - 4:30PM, Monday through Friday). Contact (312) 744-7204 for an appointment. If the proposed work at the site involves excavation, exposure of soil, or soil disturbance, this file must be reviewed and the remainder of this form completed before the permit can be issued. **Please note that for some locations, additional health and safety procedures may be required by law.**

Please complete the following:

I have reviewed and understand the documents maintained by 2FM regarding potential environmental contamination at the site. Further, I will ensure that all work at the site, and any monitoring required, including but not limited to radiation monitoring, will be performed in a manner that is protective of human health and the environment and in compliance with all applicable local, state, and federal laws, rules, and regulations, especially those pertaining to worker safety and waste management. I will ensure that the results of any radiation monitoring and/or surveying conducted shall be provided to 2FM for forwarding to IEMA and the United States Environmental Protection Agency (via fax to 312.692.2469 or 312.692.2466) **within two (2) weeks of their completion**. If surface gamma scans exceeding two times the background count rate are detected, I will follow the Carnotite site's **Utility Emergency and Maintenance Plan** (Plan) and immediately contact 2FM (see the Contact List in Attachment 4 of the Plan) for further instructions and so they can coordinate with IEMA. I will also immediately notify the United States Environmental Protection Agency at (312) 353-2318 and request connection to Verneta Simon or Dan Haag.

Applicant Name (print) _____ Signature _____

Site Address and Work Location (Describe exact site location and attach map): _____

_____

Description of Work: _____
(Attach additional details as necessary)

Company Name, Address, Phone No. _____

General / Prime Contractor Name, Address, Phone No. _____
(*Include subcontractor information if applicable)*

Safety Officer / Phone No. _____

Radiation Contractor / Phone No. (if applicable) _____

Check if City Department Work ☐ Department Name _____

Permit No.: _____

Today's Date _____ Expected Start Date _____ 2FM Approval / Date _____

Please return this completed form and location map to 2FM at 30 N. LaSalle St., Suite 300, Chicago, Illinois 60602 during normal business hours (8:30 AM - 4:30 PM, Monday through Friday).

For 2FM Use Only

Revised August 10, 2016

DEPARTMENT OF FLEET AND FACILITY MANAGEMENT

CITY OF CHICAGO

FORM NO. 2FM.RADIUM.PRIVATE.06 (CARNOTITE Private Property)

Notice is hereby given that environmental contamination associated with the Former Carnotite Reduction Company site may be present within or near the location for which you have requested a permit. Proper safeguards must be employed when performing work at this site in order to avoid potential threats to human health and safety and the environment. The Illinois Emergency Management Agency (IEMA) is the lead regulatory agency for contamination associated with the Carnotite site.

A file containing detailed information regarding the environmental contamination which may be present in the vicinity of the proposed work location is available for review at the City of Chicago Department of Fleet and Facility Management (2FM) at 30 N. LaSalle St., 3rd Floor, Chicago, Illinois 60602 during normal business hours (8:30AM - 4:30PM, Monday through Friday). Contact (312) 744-7204 for an appointment. If the proposed work at the site involves excavation, exposure of soil, or soil disturbance, this file must be reviewed and the remainder of this form completed before the permit can be issued. **Please note that for some locations, additional health and safety procedures may be required by law.**

Please complete the following:

I have reviewed and understand the documents maintained by 2FM regarding potential environmental contamination at the site. Further, I will ensure that all work at the site, and any monitoring required, including but not limited to radiation monitoring, will be performed in a manner that is protective of human health and the environment and in compliance with all applicable local, state, and federal laws, rules, and regulations, especially those pertaining to worker safety and waste management. I will ensure that the results of any radiation monitoring and/or surveying conducted shall be provided to 2FM for forwarding to IEMA and to the United States Environmental Protection Agency (via fax to 312.692.2469 or 312.692.2466) **within two (2) weeks of their completion**. If surface gamma scans exceeding two times the background count rate are detected, I will immediately contact the IEMA at 217-782-7860 and request connection to Kelly Grahn or Kelly Horn in the Environmental Management Section. I will also immediately notify the United States Environmental Protection Agency at (312) 353-2318 and request connection to Verneta Simon or Dan Haag.

Applicant Name (print) _____ Signature _____

Site Address and Work Location (Describe exact site location and attach map): _____

_____

Description of Work: _____
(Attach additional details as necessary)

Company Name, Address, Phone No. _____

General / Prime Contractor Name, Address, Phone No. _____
(*Include subcontractor information if applicable)*

Safety Officer / Phone No. _____

Radiation Contractor / Phone No. (if applicable) _____

Check if City Department Work ☐ Department Name _____

Permit No.: _____

Today's Date _____ Expected Start Date _____ 2FM Approval / Date _____

Please return this completed form and location map to 2FM at 30 N. LaSalle St., Suite 300, Chicago, Illinois 60602 during normal business hours (8:30 AM - 4:30 PM, Monday through Friday).

For 2FM Use Only

Revised August 10, 2016

ATTACHMENT 2

GENERAL PROCEDURE FOR RADIOLOGICAL MONITORING OF POTENTIALLY CONTAMINATED SOIL

(3 Pages)

GENERAL PROCEDURES FOR RADIOLOGICAL MONITORING OF POTENTIALLY CONTAMINATED SOIL FORMER CARNOTITE REDUCTION COMPANY SITE CHICAGO, IL

1. Purpose

This document is intended to be used as general procedures or a guideline for performing radiological monitoring of radium and uranium during the excavation and handling of potentially contaminated soils within the Illinois Emergency Management Agency (IEMA) radioactive material license area for the Former Carnotite Reduction Company Site (license area) and surrounding City of Chicago permit hold areas (permit hold area) (see Attachment 1 for locations of license and permit hold areas). The goal of the radiological monitoring is to ensure that exposures to personnel are kept As Low As Reasonably Achievable (ALARA), minimize contamination of equipment, and prevent potentially contaminated soils from being removed from the site.

2. Scope

The procedures contained in this document are intended to be used during the excavation of soil for utility or other excavation work conducted by the City of Chicago, its representatives, or private entities conducting work in the license area or City-owned property or right-of-ways in the permit hold area, but do not cover transportation and disposal of any contaminated soils. The intent is to limit potential cross-contamination of personnel and equipment, not to classify the concentrations of uranium and radium in the soil for disposal determination.

These procedures also do not apply to private entities working on privately-owned property within the permit hold area.

For the purposes of these procedures, soil being excavated within the licensed area will be considered contaminated until sufficient sampling and monitoring has been performed to release excavated soil for unrestricted use. For the permit hold areas outside of the licensed area, soil will be considered clean with respect to radiological contamination unless gross gamma levels in the soil indicate the potential for contamination.

3. Instrumentation

3.1. Personnel and Equipment Monitoring – Ludlum Model 3 Survey Meter with Ludlum Model 44-9 G-M Pancake Detector, or equivalent.

3.2. Surveys of Removable Contamination on Equipment – Ludlum Model 2929 Alpha/Beta Sample Counter with Model 43-10-1 Scintillation Detector, or equivalent.

3.3. Surface Gamma Surveys of Soil – Ludlum Model 2221 Scaler / Ratemeter with Ludlum Model 44-10 2”x2” NaI Detector, or equivalent, equipped with a 6” lead collimator shield.

4. Monitoring Procedure

4.1. Prior to starting excavation, an instrument specific background count rate shall be determined by collecting 5 one-minute integrated counts in different locations away from the planned excavation and away from known areas of contamination.

4.2. A surface gamma scan of the excavation shall be performed using a Ludlum Model 2221 Scaler / Ratemeter with attached 2"x 2" NaI probe, or equivalent. This instrument cannot differentiate between radium and uranium so a conservative action level of 2x the average background count rate will be utilized to account for either or both contaminants being present. Alternative count rate thresholds may be used if the instrument has been calibrated specifically for radium and uranium. However, the lower of the radium or uranium instrument count rate thresholds should be used to since it cannot be determined in the field what the specific contaminant is.

4.3. The trench shall be excavated in lifts not to exceed 18 inches in depth and the maximum count rate for each lift shall be recorded on an appropriate survey form or field notebook. A count rate reading of 2x background shall be indicative of potential contamination.

4.4. The Health Physics Technician may enter the excavation and survey the walls and floors to a maximum depth of four feet. For excavations deeper than four feet, the soil may be surveyed bucket by bucket as it is excavated. Alternatively, excavated soil may be placed on plastic sheeting and surveyed as each bucket is placed on the sheeting.

4.5. If contamination is identified, personnel entering the excavation should wear disposable personal protective equipment (PPE), when available. This includes rubber booties, Tyvek suits, and latex gloves. All PPE shall be collected at the conclusion of the excavation work and managed as contaminated.

4.6. At the conclusion of excavation, a sketch or map of location of the completed excavation with appropriate landmarks shall be created along with a record of the gamma surveys.

5. Soil Management

5.1. Excavations within License Area

All soil within the licensed site boundary shall be considered contaminated until it has been properly evaluated by the 2FM's Radiation Safety Officer. Prior to excavation activities, the City's radiological contractor and associated Radiation Safety Officer will be notified. Also, when possible, excavation activities should be postponed until the radiological contractor and radiation safety officer arrive on site. All soil excavated within the licensed area shall be returned to the excavation area, if possible. If the soil cannot be returned to the excavation, the soil shall be collected and stored within the license area in an appropriate container such as a 55-gallon drum or roll-off container and samples collected and analyzed for radium and uranium via gamma spectroscopy analysis. Each container should be labeled with the generation date, source location, and gamma count rate range. The property owner will designate an appropriate storage area for excavated soil. No soil may be transported off site without advance approval from IEMA.

5.2. Excavations within Permit Hold Area outside of License Area

Soil excavated within the permit hold area outside of the license area shall be considered free of radiological contamination unless surface gamma scans exceed 2x the background count rate. Soil below the 2x background count rate threshold may be disposed of without regard to radioactivity.

Soil exceeding 2x the background count rate shall be placed back into the excavation, if possible. If the soil cannot be returned to the excavation, soil may be collected on plastic sheeting adjacent

the excavation in non-emergency situations for further characterization by the City's radiological contractor. In emergency situations, the soil that cannot be returned to the excavation shall be collected and stored within the license area in an appropriate container such as a 55-gallon drum or roll-off container. Each container should be labeled with the generation date, source location, and gamma count rate range. However, if soil is determined not to contain radium or uranium above background levels, the generator may be held accountable for disposal. For private utility or other excavation work on City-owned property within the permit hold area, equivalent soil screening and management procedures must be conducted by qualified personnel.

6. Surveying Equipment for Contamination

Equipment that comes into contact with potential contamination exceeding the 2x background count rate threshold must be evaluated for surface contamination. Surface scans shall be performed using a Ludlum Model 3 Survey Meter with Ludlum Model 44-9 Pancake G-M Detector, or equivalent. Removable contamination smears shall be collected and analyzed on a Ludlum Model 2929 Alpha/Beta Sample Counter with Model 43-10-1 Scintillation Detector, or equivalent. Instrumentation may be substituted as long as it is capable of detecting the following contamination limits set forth in 32 Illinois Administrative Code 340 Appendix A:

	Average	Maximum
Removable Alpha Contamination:	33 dpm/100 cm^2	100 dpm/100 cm^2
Fixed Alpha Contamination:	1000 dpm/100 cm^2	5000 dpm/100 cm^2

Equipment that has been surveyed for both fixed and removable surface contamination and demonstrated to be below the limits may be released for unrestricted use. In the event of an emergency when smears are not capable of being analyzed onsite, equipment may be released if no count rates are identified on the surface scan above 2x the background count rate. Smears should still be collected and analyzed when possible to document contamination levels appropriately. If contamination above the limits is identified, dry decontamination techniques shall be used and the equipment re-surveyed.

7. Surveying Personnel for Contamination

Personnel that come into contact with potential contamination exceeding the 2x background count rate threshold must be evaluated for surface contamination. Personnel frisking surveys shall be performed using a Ludlum Model 3 Survey Meter with Ludlum Model 44-9 Pancake G-M Detector, or equivalent. Personnel frisking surveys shall at a minimum include the hands and feet, as well as any areas of potential visible contamination on clothing. All personnel frisking surveys shall be to background levels. If count rates above background levels are identified on personnel, decontamination with towels and limited amounts of water or hand wipes is acceptable.

8. Reporting

At the conclusion of the monitoring, a written report shall be prepared that describes the work performed, location of excavation, instrumentation used, and all radiological data collected. The report is to be provided to the City of Chicago Department of Fleet and Facility Management (2FM) and IEMA within 2 weeks of project completion.

ATTACHMENT 3

HEALTH AND SAFETY PROTOCOL CHECKLIST

(1 Page)

HEALTH AND SAFETY PROTOCOL CHECKLIST
UTILITY EMERGENCY AND MAINTENANCE
FORMER CARNOTITE REDUCTION COMPANY SITE
CHICAGO, ILLINOIS

Health and Safety Procedures	Completed
DO provide security, including barriers preventing public access, to the work area, equipment, and soil staging areas	☐
DO wear personal protective equipment (PPE), including water-resistant, disposable boot covers (latex, butyl rubber), Tyvek® coveralls, nitrile gloves, and safety glasses within the licensed area. Outside the licensed area, the radiological contractor may determine if PPE is required based on the potential for exposure and surface gamma scan results.	☐
DO use plastic sheeting to contain excavated soils, debris, etc. until the material can be monitored and characterized	☐
DO establish a contamination reduction zone using plastic sheeting for removing boot covers and PPE, laying down potentially-contaminated tools, etc.	☐
DO use dust control (for example, hose or water truck for spraying soil) during soil excavation, saw cutting, etc.	☐
DO contain rainwater or other water runoff (for example, water sprayed for dust control) in contact with potentially contaminated soil; DO NOT allow the water to leave the site	☐
DO NOT allow personnel, PPE, soils, tools, heavy equipment, etc. to leave the site until appropriate radiological screening is conducted (see Attachment 2) to verify uranium and radium count rates or concentrations are below appropriate screening levels	☐
DO minimize possible exposure to the extent practicable by limiting time in potentially-contaminated areas, properly using PPE, avoiding contact with excavated materials, and chemical hygiene (i.e. no eating, drinking, or use of tobacco or cosmetics), including frequent hand washing, prompt removal of potentially-contaminated clothing	☐

ATTACHMENT 4

UTILITY EMERGENCY CONTACT LIST

(3 Pages)

UTILITY EMERGENCY CONTACT LIST
FORMER CARNOTITE REDUCTION COMPANY SITE
CHICAGO, ILLINOIS

ILLINOIS EMERGENCY MANAGEMENT AGENCY (IEMA)

- Kelly Horn
  Section Head, Environmental Management
  Bureau of Radiation Safety
  Illinois Emergency Management Agency
  217.558-5135
  Kelly.Horn@illinois.gov

- Kelly F. Grahn
  Senior Health Physicist, Unit Supervisor
  Low Level Radioactive Waste and Site Decommissioning
  Illinois Emergency Management Agency
  Bureau of Radiation Safety, Environmental Management
  Bldg 8, Suite 55, 245 W Roosevelt Rd.
  West Chicago, IL 60185
  Cell: 630-947-2721
  Office: 630-293-8242
  24 hr: 217-782-7860
  Kelly.Grahn@illinois.gov

CITY OF CHICAGO 24-HOUR EMERGENCY RESPONSE CONTRACTOR (For City Work Only)

SET Environmental, Inc.

- 24 hour Emergency – 877-437-7455

CITY OF CHICAGO RADIATION SAFETY OFFICER FOR LICENSED AREA

Stan A. Huber Consultants, Inc.

- Glenn Huber
  Health Physicist and Radiation Safety Officer
  200 North Cedar Road
  New Lenox, Illinois 60451
  815-485-6161
  GlennHuber@sahci.com

CITY OF CHICAGO

Fleet and Facility Management (2FM)

- Abby Mazza (Primary Contact)
  Environmental Engineer III
  Bureau of Environmental, Health & Safety Management (EHS)
  30 N. LaSalle St., Suite 300
  Chicago, Illinois 60602-2575
  312-744-3161
  Abigail.Mazza@cityofchicago.org

- Kimberly Worthington (Secondary Contact)
  Deputy Commissioner
  Bureau of Environmental, Health & Safety Management (EHS)
  30 N. LaSalle St., Suite 300
  Chicago, Illinois 60602-2575
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