REMEDIAL ACTION WORK PLAN
FORMER RIVERFRONT PRISON

FORMER RIVERFRONT STATE PRISON
DELAWARE AVENUE AND ELM STREET
CAMDEN, CAMDEN COUNTY, NEW JERSEY
NJDEP SRP PI# 015986

Prepared For:

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3.0 REMEDIAL INVESTIGATION OVERVIEW

An RI for soil and ground water was conducted at the Site based on a review of historical data, historical records, and NJDEP recommendations. The RI was completed in accordance with the NJDEP TRSR at N.J.A.C. 7:26E-4, the NJDEP *Ground Water Technical Guidance* dated 3 April 2012, the *Soil SI/RI/RA Technical Guidance* dated August 1, 2012, the NJDEP *Field Sampling Procedures Manual* (FSPM) dated August 2005, and the *Historic Fill Material Technical Guidance* dated April 29, 2013. The objective of the RI was to collect soil and ground water samples and determine if impacts remain from historical use of the Site and to address historic fill. The RI included the following activities:

- Advancing 22 soil borings and collecting associated soil samples
- Installing and sampling 3 permanent monitoring wells
- Installing and sampling 3 temporary wells
- Synoptic water level measurements
- Updating the receptor evaluation (RE)

An RIR was submitted by Langan on behalf of the NJEDA in May 2015. A CEA/WRA fact sheet was also submitted for the Site at the same time.

3.1 Soil Investigation

An investigation was conducted to characterize potential impact to soil from AOCs B-2, B-3, B-4, E, and K. With the exception of AOC E (Historic Fill), no impacts were found in soil. AOC E, encountered over most of the Site, is assumed to be contaminated with PAHs and metals. An engineered cap followed by a Deed Notice and Soil Remedial Action Permit were recommended in the RIR.

3.2 Groundwater Investigation

An investigation was conducted to characterize potential impacts to ground water from AOCs B-2, B-3, B-4, and E. However, metals exceedances of aluminum, arsenic, iron, manganese, and sodium were detected in one or more permanent monitoring well samples. Aluminum, iron, and manganese are considered naturally occurring in soil and are believed to be the result of ambient levels in soil resulting in ground water

4.0 PROPOSED REMEDIAL ACTION

4.1 Remedial Action Strategy

This RAWP presents the proposed remedial action for the presumed soil contamination associated with AOC E – Historic Fill. This remedial action is intended to complete the requirements of N.J.A.C. 7:26E-5. The RAWP proposes an engineering control in the form of a clean fill cap to protect the public from direct contact exposure to soil contaminants. Institutional controls via a Deed Notice and Remedial Action Permit for soil will also be proposed as part of the remedial action. The remedial action will be implemented in conjunction with the construction of the Cooper's Poynt Waterfront Park and Road redevelopment project.

4.2 Permits

Local, county, and state permits/certifications required for the remediation activities will be obtained by NJEDA and/or the construction contractor for the project prior to the start of construction. The following permits and certifications are required to implement the remedial action as identified below.

- NJDEP Flood Hazard Area Permit;
- Camden County Soil Conservation District Soil Erosion and Sediment Control Plan Certification;
- Camden County Planning Board Approval;
- City of Camden Planning Board Approval;
- Local Construction Permits;
- NJDEP Division of Lang Use Regulation Permits

4.3 Remedial Action

The remedial activities proposed herein are described in detail in the following sections.

4.3.1 Public Notification

Public notification will be made at least 14 days prior to start of work in accordance with N.J.A.C. 7:26C-1.7. A sign will be placed at the Site and associated documentation will be sent to the Camden County Clerk and the Camden County Health Officer.

4.3.2 Field Mobilization

Prior to the start of field work, a construction entrance, access routes, temporary field offices, and storage facilities will be established at the Site and maintained for the duration of the construction activities. Electrical, telephone, sanitary, and water hookups will be arranged by the construction contractor, if necessary. Containerized water and sanitary facilities will be provided, if necessary.

Utility mark outs will be requested by calling the New Jersey One Call Service (1-800-272-1000) three to ten full business days prior to conducting intrusive activities to arrange for required utility clearances.

Clearing and grubbing of vegetation will be conducted as necessary to allow implementation of the construction. Prior to the start of construction, soil erosion and sediment control techniques will be implemented in accordance with the Soil Erosion and Sediment Control Plan, certification issued by the Camden County Soil Conservation District.

Structures outside the work area (i.e., fencing, lighting, and other structures) will be protected by appropriate means (i.e., fluorescent flagging, etc.) to minimize damage during construction activities.

4.3.3 Excavation

Excavation will be required to accommodate installation of underground utility lines, light poles, foundation structures for an elevated deck, and other features. In addition, some movement of existing ground cover may take place for re-grading purposes during the remedial action. Historic fill, characterized by brick, ash, cinders, and/or wood debris may be encountered during these activities. Historic fill is assumed to be contaminated with PAHs and metals, and cannot be used elsewhere on the Site as clean fill. Historic

fill material may be temporarily stockpiled for reuse on Site as fill beneath the engineered cap described herein. Historic fill material may only be used or staged within AOC E, or the extent of the mapped historic fill area as shown on Drawing 2. No excavated material is anticipated to be sent off-site during the remedial action. Boring logs showing the approximate depths and locations of historic fill encountered across the Site are presented in Appendix B. Actual subsurface conditions in between where borings were advanced may differ from those conditions encountered and described in the boring logs.

4.3.4 Engineered Cap

As part of the Cooper's Poynt Waterfront Park and Road redevelopment project an engineered cap will be installed as shown on the Cooper's Poynt Waterfront Park and Road Development Plans (Appendix C). A Portion of the Site is currently used as a parking area. A portion of this parking area will remain as part of the engineered cap. The cap will prevent contact with contaminants within AOC E – Historic Fill.

The cap will consist of a combination of cover types including:

- vegetated areas,
- asphalt paving,
- gravel (stone), and
- concrete paving.

Vegetated and gravel covered areas will have a minimum thickness of two feet or greater, or a minimum thickness of one foot overlying a geotextile fabric barrier. Asphalt paved areas will have a minimum thickness of 12 inches including clean fill, gravel, and paving. Concrete paved areas will have a minimum thickness of 10-inches including clean fill, gravel, and paving. Cross sections of the proposed engineered cap installed as part of the Cooper's Poynt Waterfront Park and Road redevelopment project are provided in Appendix C.

A surface cover of up to 6 inches of top soil and up to 2 feet of crushed concrete were observed in borings, advanced during the RI, throughout most of the Site (see Appendix B). This clean surface cover will be used as the base layer of the engineered cap. Imported clean fill brought to the Site will adhere to the following requirements:

For each type and source of imported clean fill derived from a virgin quarry, laboratory analytical data from one sample collected within the last year and documentation of clean fill is to be provided (at the discretion of the LSRP, a sample may not be required to establish the nature of the clean fill). The sample must be analyzed for full TCL/TAL suite, hexavalent chromium, and EPH by an NJDEP-certified laboratory. In addition, if any sample result exceeds the NJDEP default IGWSL, synthetic precipitation leaching procedure (SPLP) data must be provided for those compounds to support that clean fill will not impact ground water. In addition, the virgin quarry supplier must provide a written certification identifying the source location of the material and that the fill meets the clean fill definition at N.J.A.C. 7:26E-1.8.

For clean fill originating from sources other than virgin quarries, additional sampling will be required. For each type of clean fill per source, soil samples must be collected at a frequency of one sample per 20 CY for the first 100 CY of soil, one sample for each additional 100 CY up to 1,000 CY, and one sample for every additional 1,000 CY. An alternative sampling frequency may be used based on the discretion of the LSRP who will rely on multiple lines of evidence when evaluating clean fill quality. The same analytical parameters and written certification required for virgin quarries applies to these other sources of clean fill.

Alternate fill will not be used as part of the engineered cap for this project.

4.3.5 Institutional Control

An institutional control in the form of a Deed Notice will be used as a component of the remedial action for the Site. The institutional control will ensure the engineering control is maintained, the long-term protection of public health and the environment, and the remedy is consistent with existing and future land use scenarios.

A Deed Notice will be established for the Site where mapped historic fill (AOC E) exists after completion of the remedial action for the entire Site. The Deed Notice will identify that historic fill is remaining at the Site and the engineering controls installed to prevent exposure to the underlying soil. The Deed Notice, which will be recorded with the Camden County Clerk, will be included in the RAR to be submitted following completion of the Site-wide remedial action.

4.4 Site Restoration

Site restoration will consist of construction of the engineered cap as part of the Cooper's Poynt Waterfront Park and Road redevelopment project. Analytical data (as applicable) and clean fill certifications will be provided for all fill sources in accordance with NJDEP's *Alternative and Clean Fill Guidance for SRP Sites*. Temporary facilities and soil erosion and sediment control measures will be removed at the completion of the remediation activities.

4.5 Decontamination and Residuals Management

4.5.1 Equipment Decontamination

Construction equipment will be cleaned and/or decontaminated as required to prevent cross-contamination or tracking of soil. Equipment decontamination will occur at designated areas determined by the construction activities.

4.5.2 Residuals Management

No residuals will be generated during the remedial action. All soil will be managed and maintained on Site.

Debris (i.e., paper, plastic, refuse, personnel protective equipment, etc.) will be placed in plastic bags or dumpsters and disposed of as non-hazardous industrial waste. It is anticipated that debris will be transported to the local municipal landfill for disposal.

4.6 Remedial Action Overview

The proposed remedial action for the Project area will be protective of public health and safety and the environment by preventing direct contact with Site contaminants. The remedial action complies with applicable federal, state, and local rules and regulations and is comprised of sound measures that will not cause uncontrolled or unpermitted discharges. The remedial action employs readily available technologies applicable to the full range of contaminants, is easy to implement, can be completed within a reasonable time frame with little to no impact to the local community, and will result in beneficial use of the Site.

4.7 Quality Assurance Project Plan

No sampling is being proposed as part of the RA. Therefore, a Quality Assurance Project Plan (QAPP) is not required.