



BUILDING 90 CONCRETE SLAB AND SOILS OPERATIONAL APPROACH

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PRE-REMEDIAL ACTIVITIES

- A. ABANDONED AND EXISTING UTILITIES ARE SHOWN IN THE AREA.
 - I. ALL UTILITIES UNDERNEATH THE REMAINING BUILDING 90 CONCRETE SLAB ARE ABANDONED.
 - II. EXISTING UTILITIES ANTICIPATED TO BE IMPACTED BY REMOVAL OF A SLAB SECTION WILL BE DE-ENERGIZED OR, IF NECESSARY, BYPASSED PRIOR TO REMOVAL OF THAT SPECIFIC SECTION.
- B. EXCLUSION ZONE WILL ENCOMPASS THE BUILDING 90 CONCRETE SLAB AND SOILS REMEDIAL EXCAVATION AND THE SOILS PROCESSING OPERATION.
 - I. EXCLUSION ZONE WILL BE ESTABLISHED USING HIGH VISIBILITY FENCE.
 - II. FENCE OR ROPE WILL BE USED TO SEPARATE THE REMEDIAL EXCAVATION FROM THE SOILS PROCESSING OPERATION.
- C. AIR MONITORS WILL BE PLACED AS DIRECTED BY SRSL.
- D. PROPOSED CRZ WILL BE PLACED AS DIRECTED BY SRSL TO ACCOMMODATE THE REMEDIAL EXCAVATION.
- E. EXISTING SCREENING BAYS WILL BE MOVED TO THE NORTHMOST EXTENT OF THE BUILDING 90 CONCRETE SLAB.
- F. THRESHOLD VALUE OF 5,000 DPM/100 CM² BETA-GAMMA IS DOCUMENTED IN TABLE 6-4 'ACCEPTABLE SURFACE CONTAMINATION LIMITS' OF THE APPROVED RADIATION PROTECTION PLAN (CABRERA, 2010).
- G. CONCRETE SLAB SECTIONS WILL BE MANAGED IN ACCORDANCE WITH SECTION 4.2.2.2 'RADIOLOGICAL SURVEYS AND SAMPLING OF CONCRETE SLABS' OF THE APPROVED SAMPLING AND ANALYSIS PLAN (CABRERA, 2010), AND AS OUTLINED IN REMEDIAL ACTIVITIES BELOW.

REMEDIAL ACTIVITIES

- A. WATER FOR DUST SUPPRESSION TO BE SUPPLIED FROM WATER TRUCK, POLYETHYLENE TANK OR NEAREST FIRE HYDRANT.
- B. TRUCK ACCESS TO BE DETERMINED BY OPERATIONS.
- C. EXCAVATION SEQUENCE.
 - I. BUILDING 90 CONCRETE SLAB CONTAINS SLAB SECTIONS APPROXIMATELY THIRTY (30) FEET ACROSS SEPARATED BY SAW-CUT JOINTS.

- II. EXCAVATION WILL BEGIN AT THE SOUTHERN MOST SLAB SECTION OF THE BUILDING 90 CONCRETE SLAB AND CONTINUE NORTH.
- III. ONE (1) SLAB SECTION WILL BE EXCAVATED BEFORE PROCEEDING TO THE NEXT SLAB SECTION.
- IV. EXCAVATION OF EACH SLAB SECTION WILL BEGIN AT THE EASTERN MOST EXTENT AND CONTINUE WEST.
- V. EXISTING EXPOSED SURFACE OF EACH CONCRETE SLAB SECTION WILL BE RADIOLOGICALLY SURVEYED PRIOR TO REMOVAL.
- VI. EACH SECTION WILL BE REMOVED TO A MINIMUM ONE (1) FOOT BELOW THE SURFACE FLOOR ELEVATION.
- VII. EXCAVATED MATERIAL WILL BE SENT FOR OFF-SITE DISPOSAL OR BENEFICIAL REUSE PROCESSING AS DETERMINED BY RADIOLOGICAL SURVEY MEASUREMENTS.
- VIII. BELOW GRADE STRUCTURES WILL ONLY BE REMOVED WHEN IMPACTED BY CONTAMINATED MATERIAL.
- D. EXCAVATION.
 - I. EXCAVATOR WITH BREAKER ATTACHMENT WILL BREAK SLAB SECTIONS INTO MANAGEABLE PIECES.
 - II. AS EACH SLAB SECTION IS REMOVED THE SUBSURFACE MATERIAL WILL BE SCANNED WITH A NaI 2x2 TO ENSURE EXPOSED SOILS ARE LESS THAN 22,000 CPM.
 - III. LOOSE MATERIALS AND DEBRIS WILL BE REMOVED FROM THE CONCRETE PRIOR TO RADIOLOGICAL SURVEYING.
 - IV. CONCRETE PIECES WILL BE RADIOLOGICALLY SURVEYED AND SEPARATED INTO RADIOLOGICALLY IMPACTED AND RADIOLOGICALLY NON-IMPACTED STOCKPILES.
 - I. RADIOLOGICALLY NON-IMPACTED CONCRETE VOID OF ATTACHED FLY ASH WILL BE PROCESSED AND RECYCLED.
 - II. RADIOLOGICALLY NON-IMPACTED CONCRETE WITH FLY ASH ADHERED TO IT WILL BE PROCESSED AND VOLUMETRICALLY SAMPLED FOR OFF-SITE DISPOSAL.
 - III. RADIOLOGICALLY IMPACTED CONCRETE WILL BE TRANSPORTED TO THE LOAD-OUT PAD FOR OFF-SITE DISPOSAL.
 - V. DEPTH OF EXCAVATION BELOW CONCRETE SURFACE IS EXPECTED TO BE APPROXIMATELY 1'-0".
 - I. SHOULD THE DEPTH OF EXCAVATION INCREASE AND BENCHING IS REQUIRED, BENCHING AT 1.5:1 WILL BE UTILIZED.

- VI. EXCAVATION IS NOT TO EXTEND BEYOND THE LIMITS OF THE BUILDING 90 CONCRETE SLAB WITHOUT APPROVAL FROM SITE MANAGER, PROJECT ENGINEER, AND USACR.
- B. FLY ASH EXCAVATED FROM THE 90 PAD AREA EXCEEDING RECOMMENDED THRESHOLD VALUE OF 22,000 CPM WILL BE TRANSPORTED TO THE LOAD-OUT PAD FOR OFF-SITE DISPOSAL.
- F. EXCAVATED FLY ASH BELOW RECOMMENDED THRESHOLD VALUE OF 22,000 CPM WILL BE SEPARATED, WINDROWED, AND SAMPLED FOR EVALUATION OF BOTH CHEMICAL AND RADIOLOGICAL PROPERTIES.
 - I. RESULTS OF THESE SAMPLES WILL DETERMINE THE FINAL DISPOSITION OF THE MATERIAL.
- G. DUST SUPPRESSION WATER AND GROUND WATER WILL BE COLLECTED VIA SUMP AND TREATED IN ACCORDANCE WITH THE SEWER DISCHARGE PERMIT BEFORE DISCHARGE TO THE NEAREST SANITARY SEWER MANHOLE.
 - I. CLASS 1 FINAL STATUS SURVEY DATA WILL BE GATHERED AS SURFACES ARE EXPOSED.
- B. A CONFIRMATORY ONE-WAY GAMMA WALKOVER SURVEY WILL BE PERFORMED FOR AREAS NOT EXCEEDING RECOMMENDED THRESHOLD VALUE OF 22,000 CPM.
 - I. THIS DATA MAY BE USED TO SUPPLEMENT THE EXISTING CLASS 2 TDF FSSU 003 IF REQUESTED BY USACR.
- C. AS THE CONCRETE SLAB PIECES ARE REMOVED AND THE EXCAVATION IS SURVEYED AND CLEARED, ANY EXPOSED FLY ASH SURFACES WILL BE KEPT WET AS A TEMPORARY DUST PREVENTATIVE.
- D. AS CONDITIONS DICTATE, SOILTAC SOIL STABILIZER MANUFACTURED BY SOILWORKS, LLC OR APPROVED EQUIVALENT WILL BE APPLIED TO EXPOSED FLY ASH SURFACE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS A MORE PERMANENT DUST PREVENTATIVE.
 - * ANY CHANGE TO THIS APPROACH MUST BE APPROVED BY THE SITE MANAGER OR PROJECT ENGINEER.

POST-REMEDIAL ACTIVITIES

LEGEND

---	FSSU 106
---	LIMIT OF EXCAVATION
---	BUILDING 90 CONCRETE SLAB
---	EXCLUSION ZONE
---	EXISTING SCREENING BAYS
---	FUTURE SCREENING BAYS
---	CONCRETE SLAB JOINT
---	PAVEMENT
---	EXISTING SANITARY LINE
---	EXISTING STORM LINE
---	EXISTING WATER LINE
---	ABANDONED STORM LINE
---	ABANDONED ELECTRICAL LINE
---	ABANDONED GAS LINE

LINDE FUSRAP Site
Tonawanda, NY
W912P4-07-D-0002, 0002

CABRERA SERVICES
 RADIOLOGICAL - ENGINEERING - REMEDIATION

Building 90 Concrete Slab and Soils Remedial Excavation Layout

Area/Subtask	Drawing No.	Rev. Date
Building 90	I	200.1e Linde_01.04_0048_a