BACKFILL, COMPACTION AND RESTORATION PLAN for the Remediation of the Seaway FUSRAP Site, Northside and Southside Areas, Town of Tonawanda, New York

Prepared for:
United States Army Corps of Engineers – Buffalo District

Under Contract No: W912P4-07-D-0001
Task Order No. 0005

Prepared by:

LATA-Sharp Remediation Services, LLC
756 Park Meadow Road
Westerville, OH 43081

Deliverable No. 16

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[redacted]

Date: 4/20/15	**Title:** Site Superintendent
Date: 4/20/15	**Title:** Project Manager
Date: 4/20/15	**Title:** Program Manager

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List of Acronyms

AMP	Air Monitoring Plan
APP	Accident Prevention Plan
BCRP	Backfill, Compaction and Restoration Plan
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
COC	Contaminant of Concern
CQCP	Contractor Quality Control Plan
FSP	Field Sampling Plan
FSS	Final Status Survey
FUSRAP	Formerly Utilized Sites Remedial Action Program
LSRS	LATA-Sharp Remediation Services, LLC
MARC	Multiple Award Remediation Contract
NYCRR	New York Code of Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
O&M	Operation & Maintenance
PBC	Polychlorinated Biphenyls
RA	Remedial Action
RCP	Regulatory Compliance Plan
ROD	Record of Decision
RPP	Radiation Protection Plan
SAP	Sampling and Analysis Plan
SARA	Superfund Amendments and Reauthorization Act
SOP	Site Operations Plan
SSHP	Site Safety and Health Plan
SVOC	Semi-Volatile Organic Compound
SWPPP	Storm Water Pollution Prevention Plan
T&D	Transportation & Disposal
TAL	Target Analyte List
TCL	Target Compound List
UFP-QAPP	Uniform Federal Policy Quality Assurance Project Plan
USACE	United States Army Corps of Engineers
VOC	Volatile Organic Compound
WMP	Water Management Plan
WMTDP	Waste Management, Transportation and Disposal Plan
WWPPP	Waste Water Pollution Prevention Plan

REVISION LOG

Backfill, Compaction and Restoration Plan for Remediation of the Seaway FUSRAP Site, Northside and Southside Areas

Revision Number/Date	Description of Changes	Pages Affected
0 3/31/15	Original Issue (Preliminary Draft)	N/A
0-A 4/21/15	Incorporation of USACE Comments (Draft)	All

CERTIFICATE OF INDEPENDENT TECHNICAL REVIEW COMPLETION

LATA-Sharp Remediation Services, LLC (LSRS) has completed the Backfill, Compaction and Restoration Plan for the Remediation of the Seaway FUSRAP Site, Northside and Southside Areas, Town of Tonawanda, New York. Notice is hereby given that an independent technical review has been conducted by staff of LSRS that is appropriate to the level of risk and complexity inherent in the project, as defined in the Contractor Quality Control Plan (CQCP).

During the independent technical review, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of assumptions; methods, procedures, and material used in analyses; alternatives evaluated; the appropriateness of data used and level of data obtained; and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing USACE policy. The document/plans were accomplished by [redacted] and the independent technical review was accomplished by [redacted] as indicated by signatures below. All reviews are documented via red line track changes in associated text files. Red line edited documents are available upon request.

[redacted] _____

Plan/Report Preparer / Date

[redacted] _____

Project Manager / Date

[redacted] _____

Construction Quality Control System Manager / Date

[redacted] _____

Independent Technical Reviewer / Date

1.0 INTRODUCTION

LATA-Sharp Remediation Services, LLC (LSRS) is providing supplies and services for task order No. 0005 issued under the Multiple Award Remediation Contract (MARC) contract No. W912P4-07-D-0001 with the United States Army Corps of Engineers (USACE), Buffalo District to remediate the Seaway Site in accordance with the *Record of Decision (ROD) for the Seaway Site, Town of Tonawanda, New York* (USACE 2009). The project scope includes the excavation, transportation and disposal (T&D) of Formerly Utilized Sites Remedial Action Program (FUSRAP) contaminated soils/sediments/debris from the Northside and Southside areas outside of the landfill. This work is being conducted by the USACE under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (SARA). Work performed will follow the requirements of the National Oil and Hazardous Substances Contingency Plan (NCP) as well as title 40 of the Code of Federal Regulations.

Work plans produced for this project include a Site Operations Plan (SOP); Accident Prevention Plan (APP)/Site Safety and Health Plan (SSHP) (which includes an Air Monitoring Plan [AMP] and Radiation Protection Plan [RPP]); Sampling and Analysis Plan (SAP) (which includes a Field Sampling Plan [FSP], Uniform Federal Policy Quality Assurance Project Plan [UFP-QAPP] and Final Status Survey [FSS] Plan); Water Management Plan (WMP) (which includes a Storm Water Pollution Prevention Plan [SWPPP] and Waste Water Pollution Prevention Plan [WWPPP]); Waste Management, Transportation and Disposal Plan (WMTDP); Backfill, Compaction and Restoration Plan (BCRP); Contractor Quality Control Plan (CQCP); and Regulatory Compliance Plan (RCP).

2.0 BACKGROUND

USACE is the lead agency for implementing FUSRAP, which was established to identify, investigate, and if necessary cleanup or control contaminated sites. The Seaway Site is a closed landfill in Tonawanda, New York, that is included on the list of FUSRAP sites. The Seaway Site is an inactive hazardous waste disposal site pursuant to Title 6 of the New York Code of Rules and Regulations (NYCRR) Part 375. The site is listed in the Registry of Inactive Hazardous Waste Sites that is maintained by New York State Department of Environmental Conservation (NYSDEC 2003). Under 6NYCRR 375-2.7(b)(3), inactive hazardous waste disposal sites are classified with respect to the threats they pose to the environment, with a Class 1 posing the greatest threat and Class 5 indicating that a site is properly closed and does not require continued operation, maintenance, or monitoring. The Seaway Site is a Class 4 inactive hazardous waste disposal site.

2.1 SITE LOCATION

The Seaway Site is located in the Town of Tonawanda, New York approximately 10 miles north of the City of Buffalo. It is situated northeast of the intersection of State Road 266 (River Road) and Interstate 190 and is approximately ¾ mile southeast of River Road. Figure 2-1 located as an attachment, provides a Site Location Map. Ashland Oil & Refining Company owns properties to the east and west; primarily using these areas for industrial purposes. Other industrial facilities

are located nearby along River Road. The nearest residences are located to the northwest across the Niagara River on Grand Island and to the east in the Town of Tonawanda. A Niagara Mohawk right of way runs along the eastern fence line.

2.2 SITE HISTORY

The Seaway property is approximately 100 acres and is referred to as the Seaway Industrial Park. It is currently owned by the Benderson Development/Sands Mobile Park Corporation, which is the successor by merger to the Seaway Industrial Park Development Company, Inc. Since the late 1980's, Browning-Ferris Industries, Inc. followed by Allied Waste operated the landfill on the property (also referred to as the Niagara Landfill).

The source of the FUSRAP contaminants of concern (COCs) at the site are residues from uranium processing that was conducted at the nearby Linde Site. Various types of wastes were disposed in the landfill starting in 1930 and ending in 1993. These included municipal, commercial, industrial (including hazardous substances), and construction wastes from nearby communities. Approximately 90 percent of the property (90 acres) has been used as a landfill; approximately 69 acres have been capped. The Site contains Seaway Southside (Seaway Area D Adjacent Property and Area Northwest of Seaway Area D) and Seaway North side (property line surface runoff area).

3.0 OBJECTIVE AND SCOPE

The overall objective of the project is to remediate FUSRAP contaminated soils/sediment from the Seaway Southside and North side areas. Site operations include activities associated with the Remedial Action (RA) to include but not limited to water management, Operation and Maintenance (O&M) of the air monitoring system, O&M of the meteorological station, equipment decontamination, worker health and safety monitoring, maintenance and radiological monitoring of roads and support areas, utility services, civil surveys, weekly conference calls, on-site meetings, dust control, site security, daily reporting and any other daily site activities. Site operations will occur after mobilization and before demobilization. LSRS will provide all labor, material, equipment, tools, supplies, sanitary facilities, and off-site laboratory facilities necessary to perform the services required to complete the tasks specified under the statement of work.

Work to be performed includes the following:

- Preparation of Project Work Plans.
- Assisting USACE with a Preconstruction Community Outreach Meeting.
- Mobilization and Demobilization activities.
- Site health, safety and environmental monitoring.
- Field verification of actual conditions and location of each work area.
- Verifying the location of the current Landfill Cut-off Wall.
- Sampling and Analysis.
- Excavation of clean overburden for storage and possible reuse.

- Excavation of FUSRAP contaminated materials from areas that are outside of the landfill's Leachate Collection System and Cut-off Wall.
- On-site Waste Management and Packaging.
- Transportation and off-site disposal.
- Radiation survey.
- Final Status Surveys.
- Backfilling the excavated areas and Site Restoration.
- Final Status Survey Technical Data Packages (TDPs) for each Survey Unit
- Project Construction Report and Lessons Learned Report.

4.0 BACKFILL AND COMPACTION

4.1 IMPORTED MATERIALS

Material used to replace soils excavated will be imported from a subcontracted borrow source. The material will be sampled and analyzed in accordance with the SAP to ensure that no contamination is present. A geotechnical consultant will be contracted to sample the soil and provide classification, grain size, moisture density and provide Standard Proctor Compaction Testing to be used for testing on site during backfill. Soils with a classification of GW or GP will not be used as a borrow source.

The material will be of a classification that will provide appropriate compaction to prevent settling in the excavation area. That final soil classification of the backfill (including clean reuse soil) will meet the requirements of the geotechnical testing lab to ensure stability of the perimeter roadway and the landfill berm. Compaction Testing is discussed further in Section 4.5, below.

A vegetative cover will be established using hydro-seeding or other USACE approved standard practice. Vegetative cover will be applied to the areas outside of gravel roadways. Top soil will be placed on the surface to a thickness of 6 inches (at a minimum).

4.2 TESTING REQUIREMENTS

Suitable backfill and topsoil materials will consist of materials that do not contain:

- FUSRAP contaminants above the cleanup criteria
- Chemical contaminants above the most stringent soil cleanup objectives provided in 6 NYCRR Part 375, Environmental Remediation Programs Subparts 375-1 to 375-4 & 375-6, (NYSDEC 2006)
- Roots and other organic matter, trash, debris, snow, ice, frozen materials, or other undesirable material as determined by the USACE.

Analytical requirements and criteria are specified in the Sampling and Analysis Plan, Volume 1 – Field Sampling Plan, Section 5.3

Analytical testing of materials from the borrow source shall be performed for the analytical fractions of concern and will include tests for radionuclides, Target Analyte List (TAL) metals;

Target Compound List (TCL) volatile organic compounds (VOC), semi-volatile organic compounds (SVOC), polychlorinated biphenyls (PCB), pesticides; and soil classification. Radioactive analyses shall include iso-U, iso-Th, and Ra-226.

LSRS will submit, prior to delivery, the following documentation to support borrow material testing, inspection, and acceptance:

- The name and location of all off-site fill borrow sources for USACE approval;
- Delivery schedule for fill materials at least 10 days prior to the intended date of the first delivery;
- Analytical and geotechnical test results; and
- Certificates of compliance certifying that all materials meet the requirements for acceptable fill, including the re-used clean overburden materials.

4.3 Backfill of Southside Areas

Prior to the removal of the FUSRAP material, the clean soils above the lens to be removed will be stripped and staged to the northwest of the excavation area. These soils could measure as much as 800 yd.^{3}. The soils will be sampled and tested in accordance with the SAP to verify that they are clean prior to being used as backfill.

Southside NW of Area D is approximately 25 feet wide by 130 feet long. After all of the FUSRAP material has been loaded and the final status survey sampling has been completed and accepted the area will be backfilled in lifts utilizing the previously stripped material from the surface. When the previously stripped material has been placed and compacted back in the excavation, imported material will be added to the top to bring the area of excavation back to pre-excavation contours.

Southside Area D Adjacent Property is a much smaller area with a suspected contamination lens at approximately 10 to 12 feet below ground surface.

Soils for backfill will be placed in the open excavation to a depth of approximately 8 to 12 inches per loose lift. Mechanical equipment will be run over the soils in even and consistent passes to bring the place materials to 95% of optimal compaction using the standard Proctor curves developed by our geotechnical consultant. Consecutive lifts will be placed on top of the previous lift and tested to the satisfaction of the geotechnical technician on-site.

4.4 Backfill of Northside Area

The Northside Area of contamination is closer to the ground surface. The excavation of this area may only extend to 2 feet below ground surface. As with the Southside excavations imported material will be placed in 8 to 12 inch loose lifts and mechanically compacted in place to meet the 90% compaction density requirement.

4.5 Compaction

The geotechnical consultant will use the developed moisture density standard proctor curves for the imported soil and for the excavated clean reuse soil for testing each lift of the backfilling

process. Soils will be placed into the excavations in nominal eight inch loose lifts and mechanically compacted to meet a compaction of 90% of standard proctor for non-traffic (road) areas. For each lift of backfill placed, the consultant will use a Troxler nuclear density gauge to determine the percent of compaction in accordance with *ASTM D1557-12 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3 (2,700 kN-m/m3))*5.0 or ASTM D698 - 12e1 *Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12 400 ft-lbf/ft 3 (600 kN-m/m 3)).*

Our soils consultant will perform a Proctor's test and sieve analysis to understand compaction characteristics of the soils with change in moisture content.

5.0 RESTORATION

5.1 PERIMETER ROAD RECONSTRUCTION

Once the south side excavations have been brought to within a few inches of previous contours the perimeter road will be reestablished using granular material stripped from the original road or new (NYS DOT #304 crushed stone) imported material. The roads will be re-graded to their original width, grade, and contour. Any damage to the perimeter haul road from truck movements will also be repaired prior to demobilization.

5.2 TRUCK TURNAROUND AREA

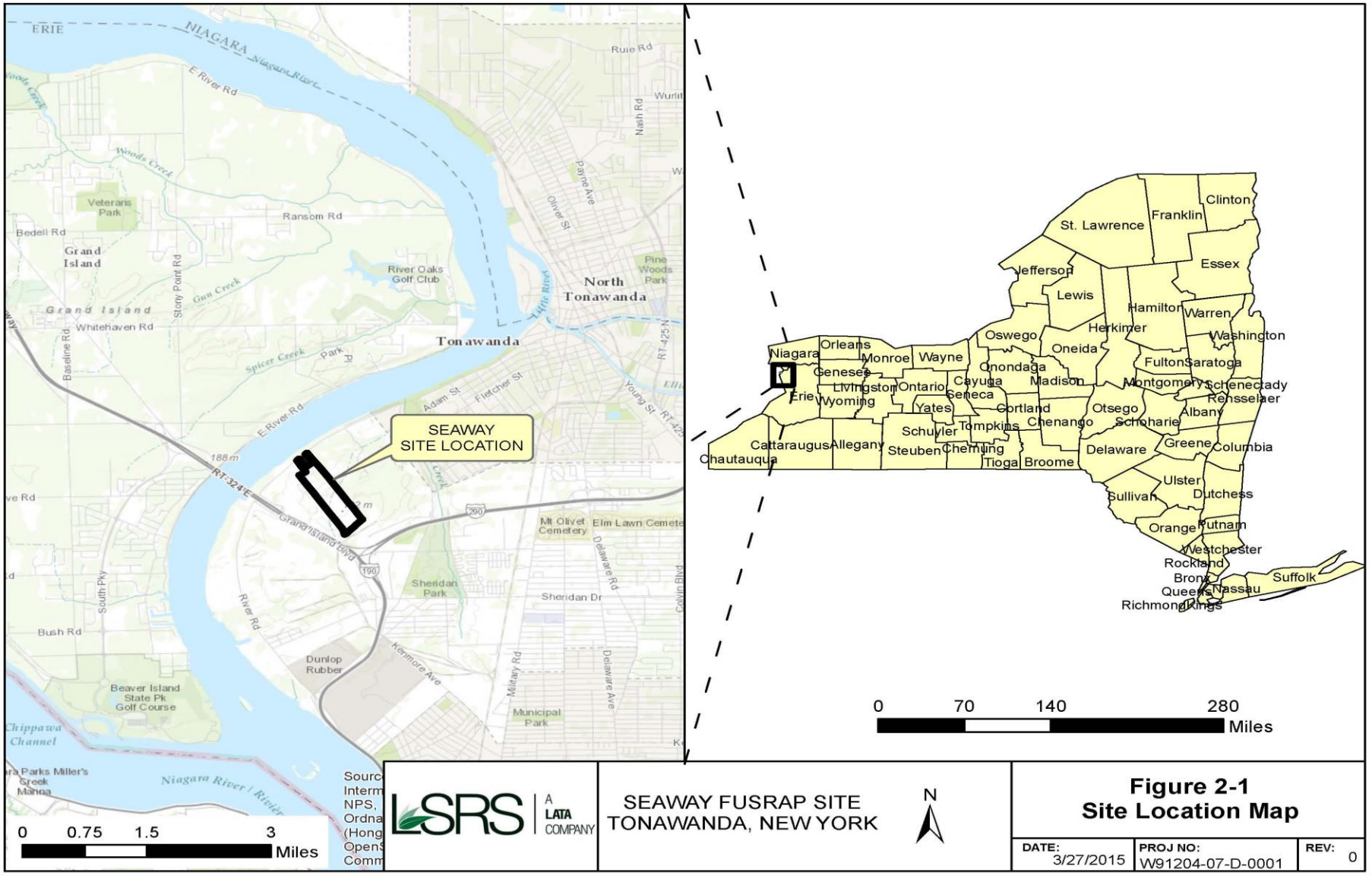
A graveled area in the southwest corner of the landfill previously intended as an access way to the rail loading pad on the Mohawk power right-of-way was constructed to facilitate turning trucks around in order to back into the excavation areas. After contaminated material transportation is completed and during the backfill operations this graveled area will be removed and the gravel relocated for the purpose of reconstructing the perimeter road.

5.3 SITE OPERATIONS AREAS

LSRS will restore the site operations areas to its photographed / documented condition prior to the start of field work. Site Operations Areas include the office trailer complex, the IMC staging area, the wastewater storage tank area, spill control and decon areas, and any other area disturbed by the movement of LSRS equipment or subcontractors. Restoration may include regarding, gravelling, and seeding.

5.4 ESTABLISHMENT OF VEGETATION / CONTROL EROSION

Once topsoil has been placed, the vegetative cover will be placed by hydro-seeding. The seed will meet the specifications of the New York State Department of Transportation highway mix. The hydro-seed mixture will include an appropriate amount of mulch material to maintain seed cover, moisture content and erosion control in order to promote a quick and healthy vegetative cover. Erosion controls / surface water runoff controls will be maintained during site restoration in accordance with the SWPPP and WMP.


SEAWAY SITE LOCATION
ERIE
NIAGARA
Niagara River
E River Rd
Ruie Rd
Nash Rd
Woods Creek
Veterans Park
Ransom Rd
Bedell Rd
Grand Island
Stony Point Rd
Gun Creek
River Oaks Golf Club
Pine Woods Park
North Tonawanda
Little River
Oliver St
Payne Ave
Whitehaven Rd
Baseline Rd
Spicer Creek
Park Dr
Tonawanda
RT-425 N
Adam St
Fletcher St
Young St
RT-425
E River Rd
188 m
RT-324 E
Grand Island Blvd
290
190
Mt Olivet Cemetery
Elm Lawn Cemete
Delaware Rd
Sheridan Park
Sheridan Dr
Colvin Blvd
South Pky
River Rd
Bush Rd
Dunlop Rubber
Kenmore Ave
Military Rd
Delaware Ave
Municipal Park
Beaver Island State Pk Golf Course
Chippawa Channel
Niagara River / Rivière
0 0.75 1.5 3 Miles
Clinton
Franklin
St. Lawrence
Essex
Jefferson
Lewis
Hamilton
Warren
Herkimer
Washington
Oswego
Oneida
Niagara
Orleans
Monroe
Wayne
Onondaga
Fulton
Saratoga
Genesee
Livingston
Ontario
Cayuga
Madison
Montgomery
Schenectady
Rensselaer
Erie
Wyoming
Seneca
Yates
Cortland
Otsego
Albany
Schuyler
Tompkins
Chenango
Schoharie
Cattaraugus
Allegany
Steuben
Chemung
Delaware
Greene
Columbia
Chautauqua
Tioga
Broome
Ulster
Sullivan
Dutchess
Orange
Putnam
Westchester
Rockland
Bronx
Queens
Nassau
Suffolk
Richmond
Kings
0 70 140 280 Miles
LSRS A LATA COMPANY
SEAWAY FUSRAP SITE
TONAWANDA, NEW YORK
N
Figure 2-1
Site Location Map
DATE: 3/27/2015
PROJ NO: W91204-07-D-0001
REV: 0