Completion Report
Peconic River Supplemental Sediment Removal Area, PR-WC-06 Area, Contract No. 329018

Brookhaven National Laboratory
Upton, Long Island, New York

Prepared by:

LAND Remediation, Inc.
an environmental services company

74 Hudson River Road
Waterford, NY 12811

Prepared for:

U.S. Department of Energy

BROOKHAVEN NATIONAL LABORATORY

December 2017

Remedial Action Completion Report Certification

I, Lisa A. Gorton, certify that I am currently a NYS registered professional engineer and that this Remedial Action Completion Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

Table of Contents

Attachments

1.0 Introduction

The purpose of this Completion Report is to document the remedial construction activity performed in support of the Peconic River Supplemental Sediment Removal, Area PR-WC-06 at Brookhaven National Laboratory (BNL) in Upton, New York. Brookhaven National Laboratory (BNL) is a Federal facility owned by the U.S. Department of Energy (DOE) and operated by Brookhaven Science Associates, L.L.C. BNL conducts research in physical, biomedical, environmental sciences and energy technologies. Cleanup actions for this scope of work are guided under CERCLIS Number NY78900008975, The Final Operable Unit V Record of Decision (ROD) for Area of Concern 30 (Peconic River), dated November 2004. The decision to complete the removal of mercury contaminated soil from Area PR-WC-06 Area was documented by the *Final Plan for Optimization of the Peconic River Remedy PR-WC-06 Area (BSA, October 2016).* Remedial construction was performed by Land Remediation, Inc. (LRI) for Brookhaven Science Associates, LLC, (BSA) under the approved Health and Safety Plan (HASP), Work Plan and Quality Assurance Project Plan (QAPP) prepared by LRI, June 2017 and approved by BSA and the regulatory agencies in July 2017. In general the sequence of work activity included:

- Preparation and submittal of the Work Plan, Health and Safety Plan (HASP), Quality Assurance Project Plan (QAPP), and the NYSDEC Wellpoint Dewatering Equivalency Permit;

- Site Mobilization included; preparation of existing haul paths for heavy equipment access to the remediation areas as shown on Figure 1; installation of a well-point dewatering system; and verifying baseline survey control;

- Sediment excavation and on-site management including waste packaging for temporary storage on-site, prior to disposal at an approved waste facility by BSA;

- Confirmation soil sampling to ensure meeting the ROD-required remediation performance goals; post-excavation survey; and site restoration and demobilization

Waste characterization sampling, temporary storage, transport and off-site disposal activities was managed by BSA.

Section 2.0 – Construction Activity

Prior to mobilization, on June 13, 2017, BSA and LRI met on-site for a pre-construction meeting. Site orientations and badging for staff were coordinated in accordance with BSA policy. After this meeting, LRI and BSA inspected the proposed excavation area to determine the need for dewatering. Although conditions were dry and the water table was approximately 20 inches below the streambed, a decision was made to install the dewatering system. In the event that heavy rains were encountered during the excavation work schedule impacts would be minimized.

2.1 Mobilization

LRI mobilized and began site preparation on July 10, 2017 through July 17, 2017. Equipment mobilized to the site included two excavators, loader, temporary site office trailer, Hydrema® articulated dump truck, tow behind water trailer, generator, equipment mats and materials for constructing site controls and staging pads. Lockwood Remedial Technologies (LRT) was on-site, July 19th and 20th to install a subsurface well-point dewatering system under the July 11th approved New York Department of Environmental Conservation (NYSDEC) permit equivalency. 28 well points were installed to approximately 5-feet below ground surface and connected to a common 6-inch header pipe that discharged to a dewatering silt bag located approximately 25-feet downstream of the excavation. Due to the dry weather conditions and nature of the sediment, it was not necessary to operate the dewatering system during the entire project and the well point system was demobilized from the site on July 27, 2017. Groundwater was not encountered during the excavation.

2.2 Excavation

Prior to excavation, 8’ x 14’ Dura-Mats® were placed on the dry ground surface to create a stable working platform within the river bed. LRI performed the excavation of the sediment area from July 19 through July 21, 2017. Sediment was excavated using an excavator with a smooth edge grading bucket to the sediment-sand interface (ranging from 6 inches to 24 inches in depth). The excavation started on the northern boundary through the narrow tree-lined section, at which point the excavator repositioned to excavate from the southern boundary working north. The center section was removed last to facilate efficient loading operations. The excavation covered approximately 2,600 square feet (sf) resulting in removal of 108

cubic yards (cy) of in-situ sediment as determined by survey. The reason the volume of excavated material is more than 108 yards is due to the high organic content and swell of the material. Once it was excavated the volume increased so the total volume of excavated waste estimated at 150 yards. The sediment, which consisted of organics, a fine to medium sand, little silt/clay and trace of fine gravel, was transported from the excavation area to the sediment staging area using an articulated Hydrema® dump truck. As-built post excavation survey data is provided as Figure 2 to show the lateral and vertical limits of removal.

2.3 Soils Confirmation Sampling

LRI performed confirmation soil sampling to ensure conformance with the ROD remediation performance goals. Samples were collected from 27 locations (0-6 inches) in depth, packaged and shipped to Test America Laboratory in St. Louis for analysis. Samples were collected in accordance with the QAPP. In conformance with the optimization plan, the average mercury concentration for the 27 samples was less than 1 mg/kg at 0.06 mg/kg, with no sample locations exceeding the 2 mg/kg upper threshold criteria. All of the soil samples were characterized as fine to medium sand, trace fine gravel. Ten percent, or three of the samples, were also analyzed for total PCB and Gamma spectroscopy. PCB concentrations were non-detect and low level gamma spectroscopy detections, are summarized in Attachment 2. Samples analyzed at Test America, St. Louis Laboratory. In accordance with the approved QAPP, 100% of the samples were verified and 10% of the samples were validated, as discussed in Section 5.0 below. Confirmatory mercury soil sample results are presented on Figure 3 and complete data summary for all of the analysis is provided in Attachment 2.

2.4 On-Site Sediment Transport and Handling

The excavated sediment was transported in the Hydrema® articulated dump truck several times a day to the lined sediment drying bed located on the west side of the East Boundary Path. Figure 1 shows the location of the haul road and staging area. The sediment contained no free draining liquid and LRI maintained water tight transfer of all sediment to the drying bed. The excavator remained positioned at the sediment staging area to consolidate and cover sediments at the end of the work day.

LRI transferred sediment to the lined drying bed staging area where field and laboratory moisture content

analysis and paint filter tests were performed on the soils to determine conformance with waste packaging protocols. An Extech® moisture probe was used to evaluate moisture content in the field. In summary, eight (8) samples were collected for paint filter analyses, three samples were collected from the stockpile prior to packaging and five (5) samples were collected during the first day of packaging. All of the paint filter tests passed, with percent solid contents ranging from 64.3 – 81.5%. Table 1 provides a summary of field and laboratory test results. Due to the dry nature of the sediments, the collection and/or storage of construction contact water was not necessary during the progress of work.

LRI packaged the sediments in 7 cy stand-alone waste package super sack containers provided to LRI by BSA. 21 bags were filled with sediment (133.71 tons), sealed, weighed on-site and staged alongside the sediment drying bed. As a conservative measure, 1-2 gallon-buckets of Waste Lock stabilizing agent was added to each bag during the waste loading. One additional bag was filled with incidental remedial wastes (i.e., PPE, HDPE liner, poly sheeting).

A BSA Waste Management representative was present during waste packaging activities to obtain field percent moisture content on the material and add stabilizing agent to each package. A summary of waste packaging bag weights and associated moisture testing is provided in Table 1.

TABLE 1 - Peconic River Supplemental Sediment Removal
Brookhaven National Laboratory

Date	Bag #	Wsoil (lbs)	Field Moisture Content (%)[1]	Lab Confirmed Paint Filter (SW 9095B)/ Solid % (SM2540)[3]
7/25/2017	1	12,700	14.60	PASS, 80.6 %
7/25/2017	2	12,400	14.70	PASS, 81.5%
7/25/2017	3	13,645	11.80	PASS, 77.2 %
7/26/2017	4	12,010	12.00	PASS, 76.4 %
7/26/2017	5	13,355	10.80	PASS, 75.1%
7/26/2017	6	12,675	12.10	
7/26/2017	7	13,195	13.00	
7/26/2017	8	12,390	12.50	
7/26/2017	9	11,885	11.60	
7/26/2017	10	12,080	10.30	
7/26/2017	11	12,495	11.80	
7/26/2017	12	12,570	9.70	
7/27/2017	13	13,050	12.50	
7/27/2017	14	13,070	11.00	
7/27/2017	15	12,630	13.40	
7/27/2017	16	13,295	12.20	
7/27/2017	17	12,950	13.90	
7/27/2017	18	12,635	13.90	
7/27/2017	19	12,445	14.30	
7/27/2017	20	12,620	14.20	
7/28/2017	21	13,335	13.40	
7/28/2017	22	1,195	Note 2	
	Total:	268,625 lbs		

Notes:

1. Field moisture content measured using Extech Model 0750 moisture probe.
2. Bag #22 contained soil bin liner debris only and weighed 1,195 lbs
3. Three additional soil samples collected from the sediment stockpile prior to packaging passed paint filter tests at 64.3, 64.4 and 78.9% solids (reference: Test America Laboratory data package 38998).

2.5 Restoration

In accordance with the *Peconic River Supplemental Sediment Removal NYSDEC Permit Equivalency Application, approved by NYSDEC June 5, 2017,* after sediment removal and confirmation that the cleanup goals were met, the edges of the excavation were smoothed to eliminate sharp drop offs. Seed mixture consisting of:

24% sorghastrum nutans / indiangrass;
22% schizachyrium scoparium / little bluestem;
10% Andropogon gerardii / big bluestem;
4% Panicum virgatum / switchgrass;
15% Elymus virginicus / Virginia wildrye;
10% Elymus villosus / Silky wildrye;
10% Panicum cladestinumor / deertoungue; and

Biodegradable jute matting was installed to approximately 10 feet outside the excavation footprint. This restored area will be monitored by BSA for a period of two full growing seasons to demonstrate reestablishment of wetland plant communities by the fall of 2019. To satisfy the federal requirements, the monitoring will continue for an additional three years.

2.6 Demobilization

Upon completion of the work, equipment and materials were demobilized from the site. The sediment pad liner and incidental consumable construction wastes (i.e., PPE, consumable sampling supply tools) were packaged in a waste super sack for disposal by BSA. All equipment and materials were removed from the site by August 8, 2017.

Section 3.0 – Waste Management

Waste characterization sampling, temporary storage, transport and off-site disposal activities were managed by BSA. Five waste characterization samples were collected by a BSA representative during waste packaging. Samples were shipped to Test America in St. Louis for analysis. A summary of waste characterization results was provided to LRI and is presented in Attachment 2. Since concentrations of Cesium-137 were identified slightly above site background levels, the waste will be disposed of as low level radioactive soil. In late August, BSA transferred the 22 super sacks of waste from the project staging area to the Waste Management Facility Reclamation Building 865 for temporary indoor storage prior to final off-site disposal. From November 1 through November 15, four shipments (seven trucks) transported the 22 super sacks of waste soils to Energy Solutions, LLC Disposal Facility in Grantsville, Utah. Waste disposal documentation is provided in Attachment 5.

Section 4.0- Health and Safety

The sediment removal work was performed in accordance with a BNL approved Health and Safety Plan (HASP). LRI's Site Safety Officer was on-site full time with the responsibility to perform morning safety meetings, act as a liaison with the BSA construction supervisor on safety concerns and performed work area monitoring. Weekly safety summaries were provided to BSA to document these activities. The work was conducted safely with no incidents or injuries. Monitoring of the air quality in work zone boundary during sediment excavation and handling was measured in real-time and documented by the Site Safety Officer who utilized the Action Levels identified to communicate any necessary personnel protection responses or actions.

During intrusive activities (i.e., sediment excavation and handling), continuous particulate air monitoring was conducted at (1) up-gradient (background) station and up to (2) locations in the immediate work zone(s). Real time ambient air sample were collected daily and were utilized as a baseline representation of the background air quality upwind of the work zone. All work was performed without any exceedances of action levels established in the Work Plan (Total Dust < 100 $\mu g/m^3$). Routine watering of the road was performed to minimize dust from project and non-project related traffic.

Per the project requirements, industrial hygiene, personal breathing zone air samples were also collected and analyzed following approved NIOSH and/or OSHA analytical methods to properly and accurately assess employee exposures. Air samples were collected daily in the location of sediment excavation and handling (i.e., drying area) and within the breathing zone of the high risk worker. Air samples were analyzed for mercury, copper, silver, lead, respirable dust and total dust. All of the metals and respirable dust concentrations were non-detect. Total dust concentrations were reported for one monitoring event, on July 20, 2017, where total dust readings (in the work area) were detected at 0.150 mg/m3 and 0.180 mg/m3. The reported total dust concentrations during this event were well below OSHA's permissible exposure limit (PEL) of 15 mg/m3 and ACGIH threshold limit value (TLV) of 10 mg/m3.

Section 5.0 - Performance Standards and Construction Quality Control

As discussed in Section 3, review of the post excavation survey and analytical data confirm that soils were removed to the pre-determined excavation boundary and concentrations of mercury in soils were below the cleanup goal of 1 mg/kg average. In addition, concentrations of PCBs and gamma spectroscopy were documented at 10% of the sample locations. A summary of analytical data is provided as Attachment 2.

Quality control/quality assurance (QA/QC) soil samples were collected in accordance with *Quality Assurance Project Plan (LRI, June 2017).* Field duplicates were collected at a frequency of one per twenty soil samples and analyzed for the primary contaminant of concern. A data usability report is provided as Attachment 3.

Section 6.0 Lessons Learned

Excavation and Restoration

- Baseline survey control was provided by BSA's contract surveyor and verified by LRI's surveyor prior to the start of excavation. This third party calibration of the site control allowed for LAND to document excavation grades and sample locations as work progressed.

- Dry weather and groundwater conditions allowed for excavation in the dry and provided clear vertical delineation of the sand/sediment boundary.

- The use of equipment mats was critical in achieving a clean and smooth post excavation and final restoration surface.

Sediment Management

- Field moisture probe measurements were not accurate when compared to laboratory data due to the presence of high organic content in the sediment matrix. Laboratory analysis of the sediment demonstrated that sediment with moisture content greater than 20% passed the paint filter test. BSA determined based upon the lab paint filter test, the high organic content of the sediment and discussion with the waste disposal facility that the sediment was acceptable for disposal.

- Packaging of waste in self-supporting 7 cy waste containers was efficient and effective with respect to loading, weighing and transferring waste soils from the pad to the staging area.

Section 7.0 Community and Stakeholder Involvement

The regulators, the Community Advisory Council (CAC), and the Brookhaven Executive Council (BER) have been an integral part of the planning and design of the cleanup of Area WC-06.

The regulators and the CAC have been briefed on this project during the detailed sediment characterization phase of Area WC-06 from November 2014 through October 2015. Comments from the regulators and the CAC on the proposed cleanup plan for Area WC-06 were incorporated into the Final Plan for Optimization of the Peconic River Remedy in November 2016. The regulators reviewed and approved the project Work Plan and QAPP, prepared by LRI in July 2017.

During the design and cleanup, the regulators were briefed on the status of the project via monthly IAG teleconferences, and the CAC members during routine presentations. The BER was also briefed on the plan and cleanup progress during the April 2016 and August 2017 meetings. The BNL employees were informed of the planned cleanup via a Lab-wide email broadcast and a website notice on July 6, 2017.

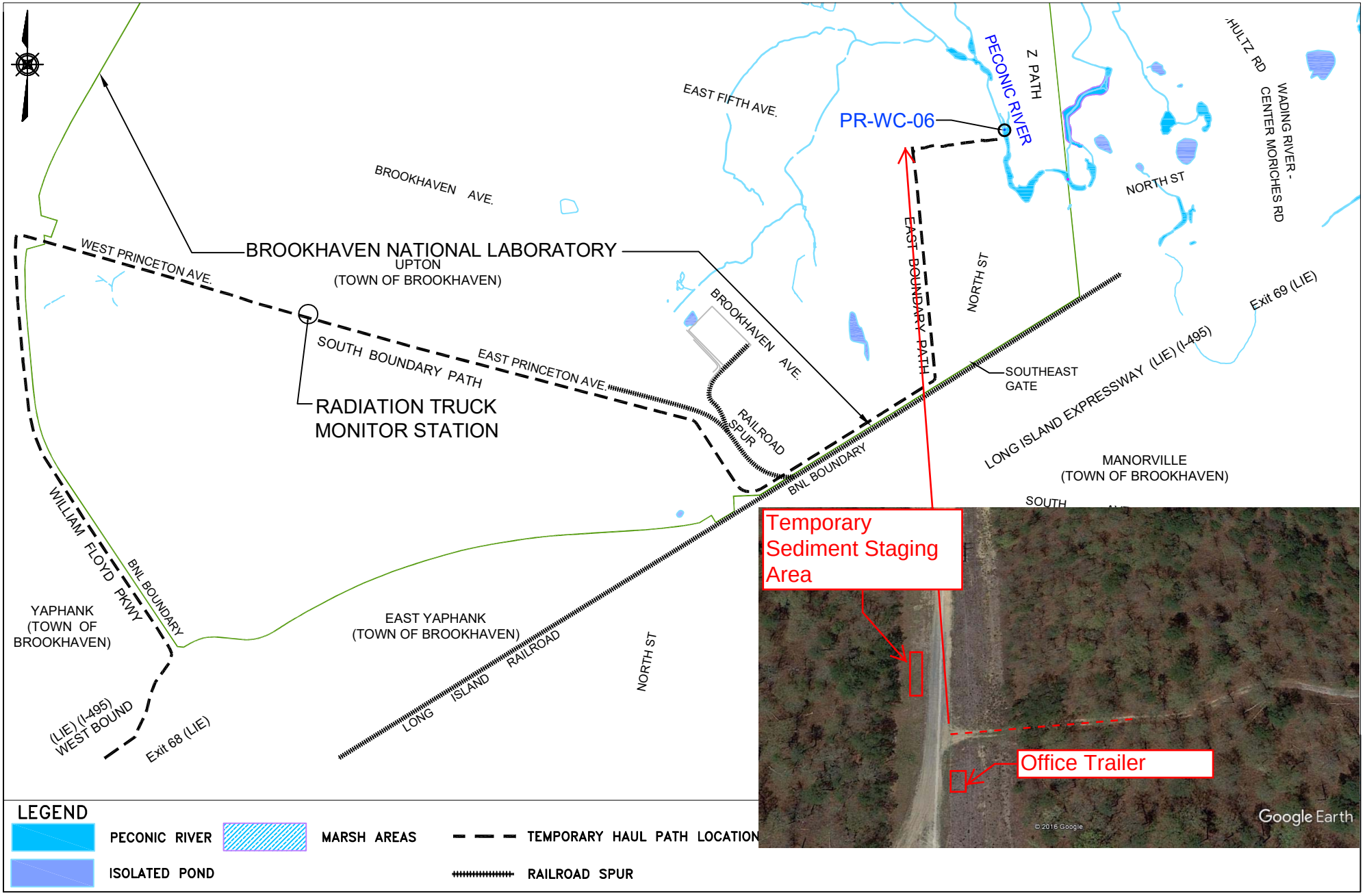
Section 8.0 Summary of Project Costs

The total cost (including BSA overhead) to perform the cleanup of Area WC-06 was approximately $825,000. The cost breakdown is summarized below:

Planning, Engineering, and Oversight:	$150,000
Sediment Excavation, Restoration, and Waste Packaging:	$500,000
Waste Transportation and Disposal:	$175,000
Total:	$825,000

All activities were performed in general conformance with the BNL Peconic River Supplemental Sediment Removal, Area PR-WC-06 Specification at a direct cost from LRI of $ 413,000 (not including BSA overhead), and was completed on budget.

Attachment 1
Figures



TITLE:

TEMPORARY HAUL PATH ROUTE AT BROOKHAVEN NATIONAL LABORATORY SITE

PECONIC RIVER AREA WC-06 CLEAN-UP

LAND Remediation, Inc.
an environmental services company

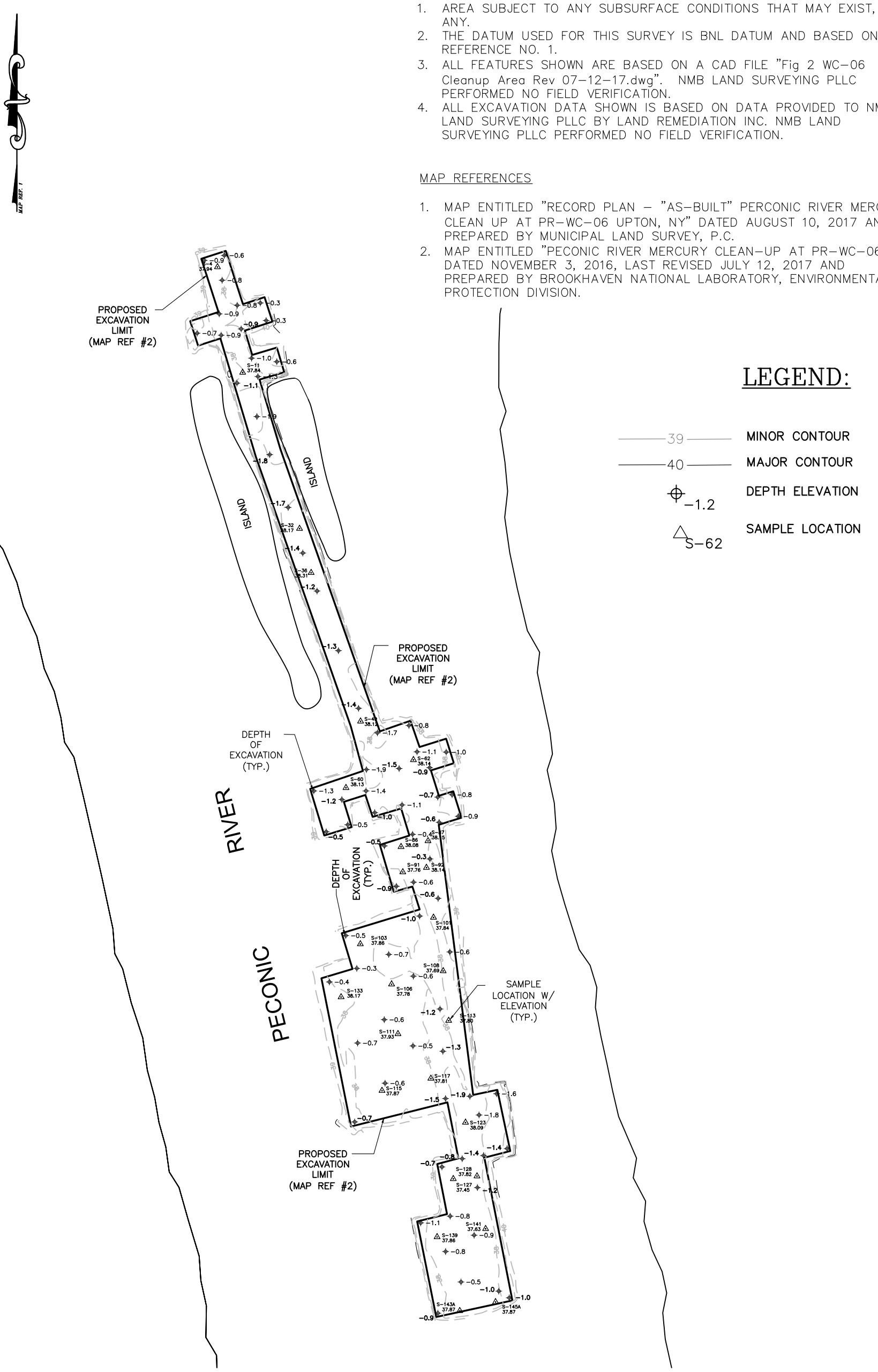
FIGURE NO.: 1

NOTES:

1. AREA SUBJECT TO ANY SUBSURFACE CONDITIONS THAT MAY EXIST, IF ANY.
2. THE DATUM USED FOR THIS SURVEY IS BNL DATUM AND BASED ON MAP REFERENCE NO. 1.
3. ALL FEATURES SHOWN ARE BASED ON A CAD FILE "Fig 2 WC-06 Cleanup Area Rev 07-12-17.dwg". NMB LAND SURVEYING PLLC PERFORMED NO FIELD VERIFICATION.
4. ALL EXCAVATION DATA SHOWN IS BASED ON DATA PROVIDED TO NMB LAND SURVEYING PLLC BY LAND REMEDIATION INC. NMB LAND SURVEYING PLLC PERFORMED NO FIELD VERIFICATION.

MAP REFERENCES

1. MAP ENTITLED "RECORD PLAN – "AS-BUILT" PERCONIC RIVER MERCURY CLEAN UP AT PR-WC-06 UPTON, NY" DATED AUGUST 10, 2017 AND PREPARED BY MUNICIPAL LAND SURVEY, P.C.
2. MAP ENTITLED "PECONIC RIVER MERCURY CLEAN-UP AT PR-WC-06" DATED NOVEMBER 3, 2016, LAST REVISED JULY 12, 2017 AND PREPARED BY BROOKHAVEN NATIONAL LABORATORY, ENVIRONMENTAL PROTECTION DIVISION.



NMB
LAND SURVEYING
PLLC
20 TROY AVE. WYNANTSKILL NY, 12198
518-376-4630

STATE OF NEW YORK NATHAN M BURROWS 050724 LICENSED LAND SURVEYOR

NATHAN M. BURROWS L.S.
NEW YORK LIC. No. 50,724

EXCAVATED DEPTH TOPOGRAPHY

PECONIC RIVER MERCURY CLEAN-UP AT PR-WC-06

HAMLET OF UPTON
COUNTY OF SUFFOLK STATE OF NEW YORK

SURVEYED BY: LRI	CHECKED BY: NMB	DATE: NOVEMBER 29, 2017
DRAWN BY: NMB	JOB No. 2246	DWG No. EXCAVATION DEPTHS

SCALE: 1"=20' Figure 2 SHEET 1 OF 2

NOTES:

1. AREA SUBJECT TO ANY SUBSURFACE CONDITIONS THAT MAY EXIST, IF ANY.
2. THE DATUM USED FOR THIS SURVEY IS BNL DATUM AND BASED ON MAP REFERENCE NO. 1.
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4. ALL EXCAVATION DATA SHOWN IS BASED ON DATA PROVIDED TO NMB LAND SURVEYING PLLC BY LAND REMEDIATION INC. NMB LAND SURVEYING PLLC PERFORMED NO FIELD VERIFICATION.

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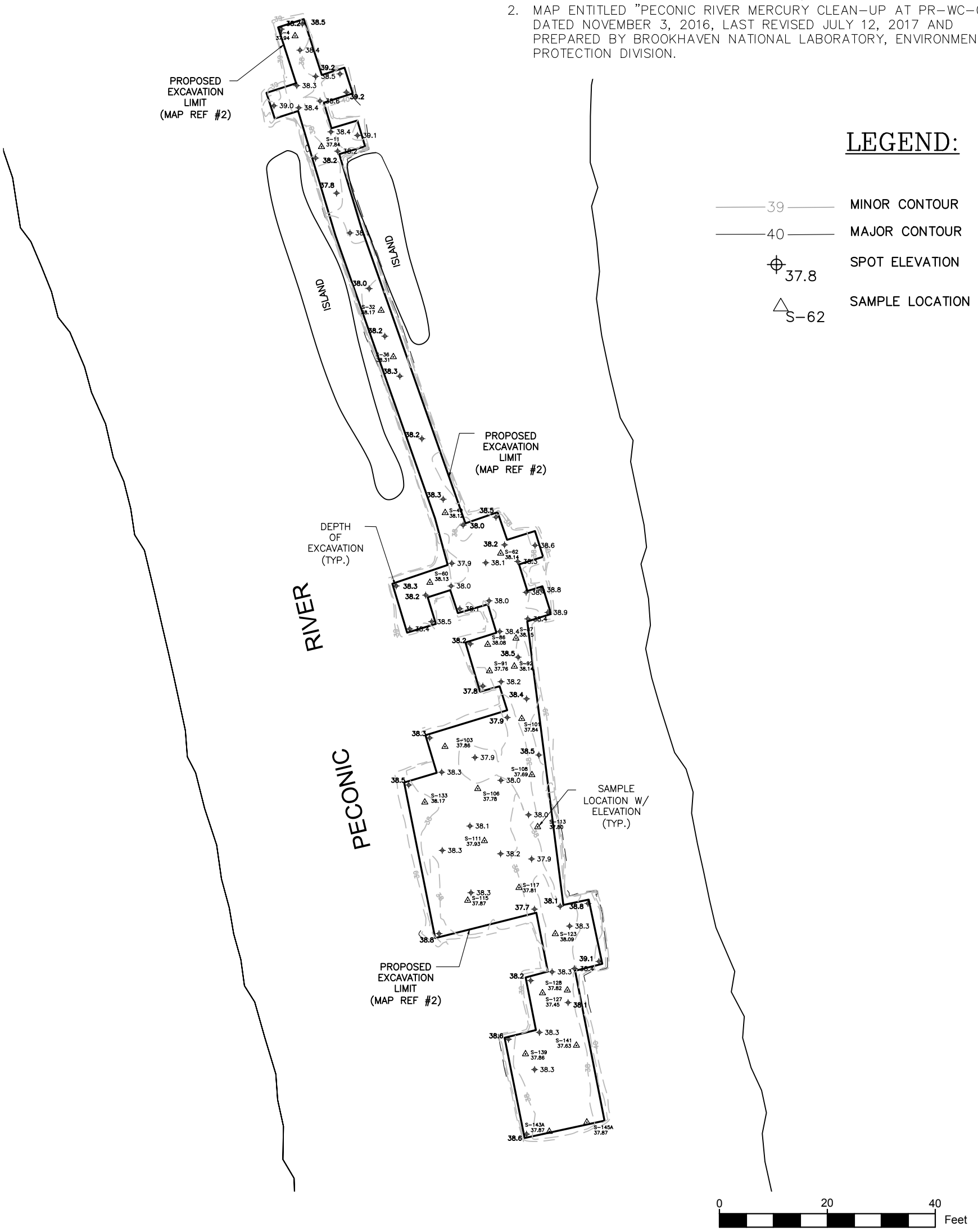
2. MAP ENTITLED "PECONIC RIVER MERCURY CLEAN-UP AT PR-WC-06" DATED NOVEMBER 3, 2016, LAST REVISED JULY 12, 2017 AND PREPARED BY BROOKHAVEN NATIONAL LABORATORY, ENVIRONMENTAL PROTECTION DIVISION.

MAP REF. 1



LEGEND:

- 39 — MINOR CONTOUR
- 40 — MAJOR CONTOUR
- 37.8 — SPOT ELEVATION
- S-62 — SAMPLE LOCATION

NMB
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STATE OF NEW YORK NATHAN M BURROWS 050724 LICENSED LAND SURVEYOR

NATHAN M. BURROWS L.S.
NEW YORK LIC. No. 50,724

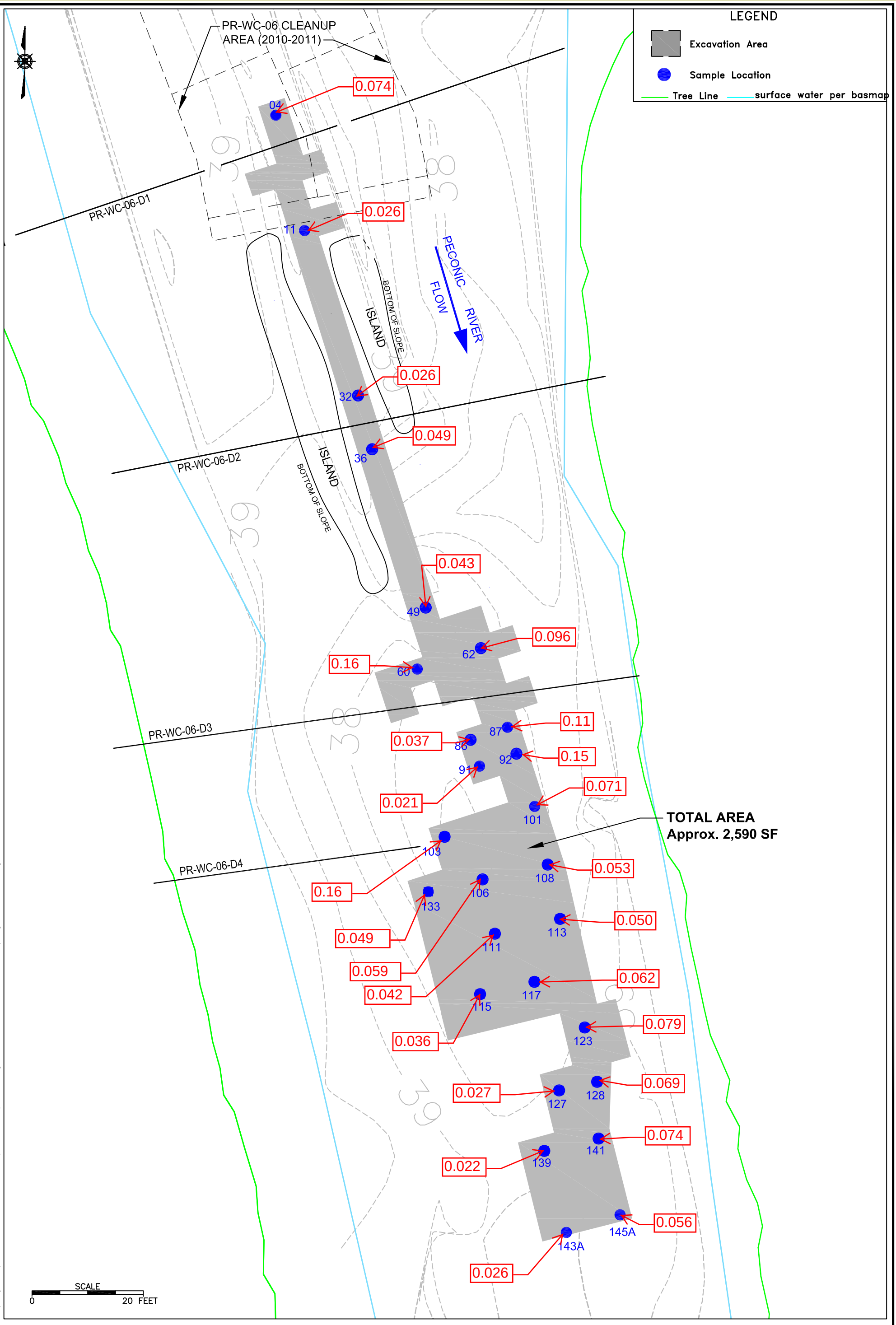
EXCAVATED ELEVATION TOPOGRAPHY

PECONIC RIVER MERCURY CLEAN-UP AT PR-WC-06

HAMLET OF UPTON
COUNTY OF SUFFOLK STATE OF NEW YORK

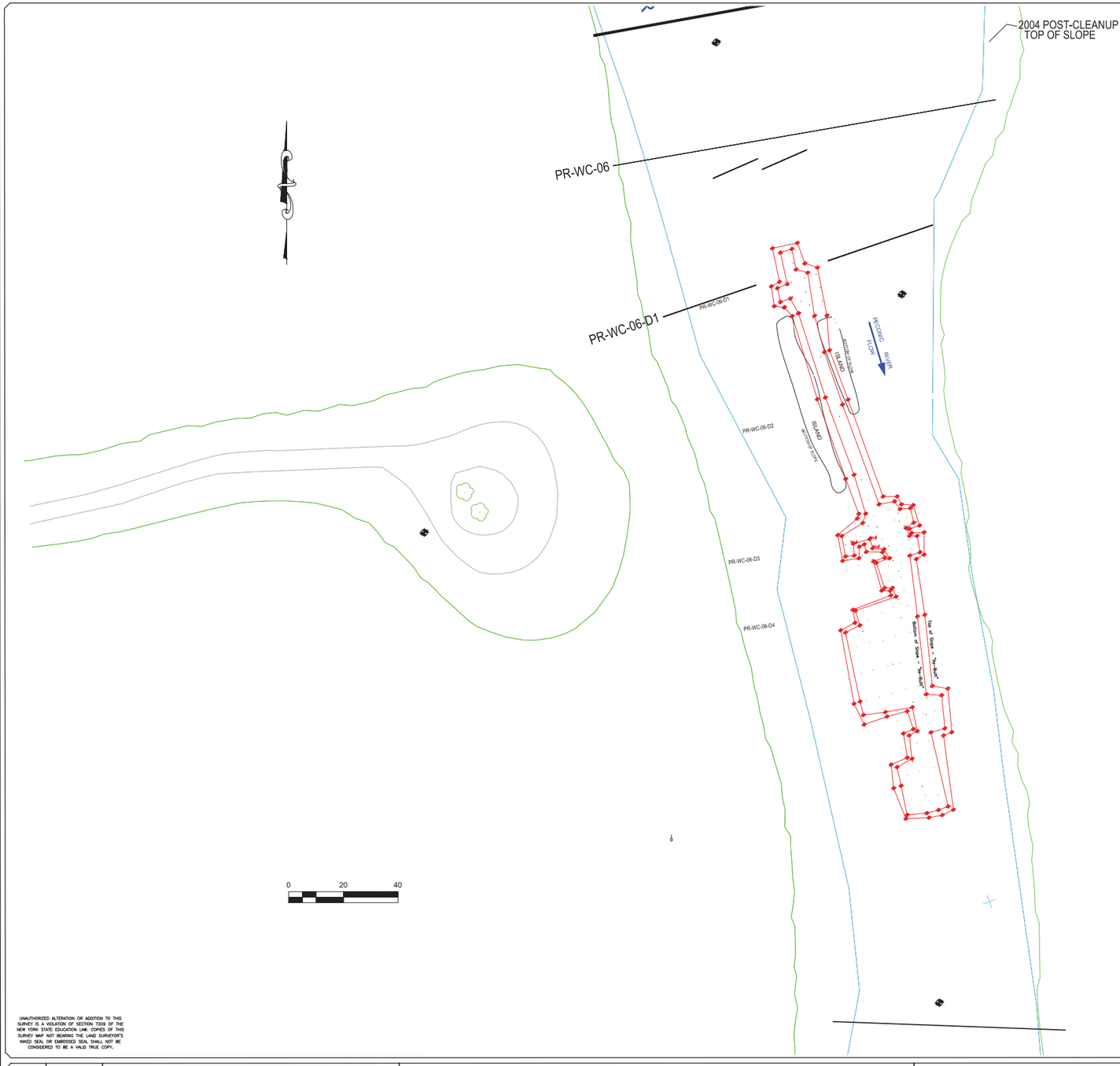
SURVEYED BY: LRI	CHECKED BY: NMB	DATE: NOVEMBER 29, 2017
DRAWN BY: NMB	JOB No. 2246	DWG No. EXCAVATION ELEVATION

SCALE: 1"=20' Figure 2 SHEET 2 OF 2



N:\Projects\Brookhaven National Lab\CAD Files\Edited Figure 3 Exacvation Area Sampling Locations.dwg

	TITLE: Soil Sampling Results (Mercury - mg/kg) AT PR-WC-06 PECONIC RIVER AREA WC-06 CLEAN-UP	LAG		PROJECT NO.: –
		CHKD:	APPD: / REV.:	NOTES: –
		FIGURE NO.: 3		



GENERAL NOTES

1) All coordinates NAD '83

2) All elevations in BNL Datum
as defined by monument "Cosmo"

3) Record plan of "As-Built" excavation limits
as per survey of July 28, 2017.

I HEREBY CERTIFY THAT I AM A PROFESSIONAL LAND SURVEYOR LICENSED TO PRACTICE IN THE STATE OF NEW YORK, AND THAT THIS PLAN IS BASED ON AN ACTUAL FIELD SURVEY PREPARED UNDER MY IMMEDIATE SUPERVISION. I FURTHER DECLARE, TO THE BEST OF MY PROFESSIONAL KNOWLEDGE AND BELIEF, THIS PLAN IS AN ACCURATE REPRESENTATION THE CONDITIONS EXISTING AS OF THE DATE HEREON.

No.	Date	Revisions

MUNICIPAL LAND SURVEY, P.C.
10 SYLVIA LANE
MIDDLE ISLAND, NEW YORK, 11953
(631) 345-2658

Record Plan – "As Built"

Peconic River Mercury Clean-Up
at PR-WC-06
Upton, NY

Robert W. Ott L.S.

Figure 4

Proj. No. 17028
Dwg. No. 1/1
Scale : 1"= 20'
Date : 8/10/17

Attachment 2
Soil Confirmatory and Waste Characterization Data Summary

Peconic River Post-Excavation Confirmatory Sediment Sample Data
Area WC-06
July 19th and July 20th, 2017

Site ID : PR-WC-06-D1-L50-04

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual
Americium-241	7/19/2017	0.0972	0.0998	0.0786	PCI/G	U
Aroclor 1016	7/19/2017	39	39	--	UG/KG	U
Aroclor 1221	7/19/2017	39	39	--	UG/KG	U
Aroclor 1232	7/19/2017	39	39	--	UG/KG	U
Aroclor 1242	7/19/2017	39	39	--	UG/KG	U
Aroclor 1248	7/19/2017	39	39	--	UG/KG	U
Aroclor 1254	7/19/2017	39	39	--	UG/KG	U
Aroclor 1260	7/19/2017	39	39	--	UG/KG	U
Beryllium-7	7/19/2017	0.203	0.447	0.371	PCI/G	U
Cesium-134	7/19/2017	0.00296	0.121	0.00562	PCI/G	U
Cesium-137	7/19/2017	0.938	0.0339	0.142	PCI/G	
Co-60	7/19/2017	-0.0415	0.097	0.0907	PCI/G	U
Cobalt-57	7/19/2017	0	0.0584	0.0205	PCI/G	U
Europium-152	7/19/2017	-0.333	1	0.596	PCI/G	U
Europium-154	7/19/2017	0.0275	0.473	0.0502	PCI/G	U
Europium-155	7/19/2017	-0.0696	0.252	0.15	PCI/G	U
Manganese-54	7/19/2017	-0.0107	0.0726	0.0411	PCI/G	U
Mercury	7/19/2017	0.074	0.035	--	MG/KG	
Sodium-22	7/19/2017	0.0288	0.0692	0.0415	PCI/G	U
Total PCB	7/19/2017	39	39	--	UG/KG	U
Zinc-65	7/19/2017	0.013	0.213	0.12	PCI/G	U

Site ID : PR-WC-06-D1-L50-11

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual
Mercury	7/19/2017	0.026	0.034	--	MG/KG	J

Site ID : PR-WC-06-D1-L50-32

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual
Mercury	7/19/2017	0.026	0.034	--	MG/KG	J

Site ID : PR-WC-06-D1-L50-36

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual
Mercury	7/19/2017	0.049	0.036	--	MG/KG	

Peconic River Post-Excavation Confirmatory Sediment Sample Data
Area WC-06
July 19th and July 20th, 2017

Site ID : PR-WC-06-D1-L50-49

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual
Mercury	7/20/2017	0.043	0.035	--	MG/KG	

Site ID : PR-WC-06-D1-L50-60

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual
Mercury	7/20/2017	0.16	0.037	--	MG/KG	

Site ID : PR-WC-06-D1-L50-62

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual
Mercury	7/20/2017	0.096	0.037	--	MG/KG	

Site ID : PR-WC-06-D1-L50-86

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual
Mercury	7/20/2017	0.037	0.035	--	MG/KG	

Site ID : PR-WC-06-D1-L50-87

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual
Mercury	7/20/2017	0.11	0.035	--	MG/KG	

Site ID : PR-WC-06-D1-L50-91

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual
Mercury	7/20/2017	0.021	0.033	--	MG/KG	J

Site ID : PR-WC-06-D1-L50-92

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual
Mercury	7/20/2017	0.15	0.037	--	MG/KG	

Site ID : PR-WC-06-D1-L50-101

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual
Mercury	7/20/2017	0.071	0.037	--	MG/KG	

Peconic River Post-Excavation Confirmatory Sediment Sample Data
Area WC-06
July 19th and July 20th, 2017

Site ID : PR-WC-06-D1-L50-103

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual
Actinium-228	7/20/2017	0.559	0.0983	0.157	PCI/G	
Americium-241	7/20/2017	0.0375	0.135	0.081	PCI/G	U
Aroclor 1016	7/20/2017	40	40	--	UG/KG	U
Aroclor 1221	7/20/2017	40	40	--	UG/KG	U
Aroclor 1232	7/20/2017	40	40	--	UG/KG	U
Aroclor 1242	7/20/2017	40	40	--	UG/KG	U
Aroclor 1248	7/20/2017	40	40	--	UG/KG	U
Aroclor 1254	7/20/2017	40	40	--	UG/KG	U
Aroclor 1260	7/20/2017	40	40	--	UG/KG	U
Beryllium-7	7/20/2017	0.143	0.413	0.342	PCI/G	U
Bismuth-214	7/20/2017	0.337	0.0449	0.0854	PCI/G	
Cesium-134	7/20/2017	-0.00296	0.0984	0.0053	PCI/G	U
Cesium-137	7/20/2017	0.295	0.0235	0.0603	PCI/G	
Co-60	7/20/2017	-0.00413	0.057	0.0494	PCI/G	U
Cobalt-57	7/20/2017	0.000569	0.0392	0.00137	PCI/G	U
Europium-152	7/20/2017	0.157	0.559	0.201	PCI/G	U
Europium-154	7/20/2017	0.125	0.31	0.265	PCI/G	U
Europium-155	7/20/2017	0.024	0.212	0.0988	PCI/G	U
Lead-212	7/20/2017	0.467	0.0683	0.095	PCI/G	
Manganese-54	7/20/2017	-0.0355	0.0811	0.0491	PCI/G	U
Mercury	7/20/2017	0.16	0.038	--	MG/KG	
Potassium-40	7/20/2017	4.43	0.231	0.873	PCI/G	
Sodium-22	7/20/2017	-0.0565	0.0957	0.0595	PCI/G	U
Thallium-208	7/20/2017	0.187	0.0348	0.0507	PCI/G	
Total PCB	7/20/2017	40	40	--	UG/KG	U
Zinc-65	7/20/2017	0.0502	0.171	0.1	PCI/G	U

Site ID : PR-WC-06-D1-L50-106

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual
Mercury	7/20/2017	0.059	0.039	--	MG/KG	

Site ID : PR-WC-06-D1-L50-108

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual
Mercury	7/20/2017	0.053	0.038	--	MG/KG	

Peconic River Post-Excavation Confirmatory Sediment Sample Data
Area WC-06
July 19th and July 20th, 2017

Site ID : PR-WC-06-D1-L50-111

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual
Mercury	7/20/2017	0.042	0.035	--	MG/KG	

Site ID : PR-WC-06-D1-L50-113

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual
Mercury	7/20/2017	0.05	0.036	--	MG/KG	

Site ID : PR-WC-06-D1-L50-115

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual
Mercury	7/20/2017	0.036	0.037	--	MG/KG	J

Site ID : PR-WC-06-D1-L50-117

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual
Mercury	7/20/2017	0.062	0.036	--	MG/KG	

Site ID : PR-WC-06-D1-L50-123

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual
Mercury	7/19/2017	0.079	0.038	--	MG/KG	

Site ID : PR-WC-06-D1-L50-127

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual
Mercury	7/19/2017	0.027	0.035	--	MG/KG	J

Site ID : PR-WC-06-D1-L50-128

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual
Mercury	7/19/2017	0.069	0.037	--	MG/KG	

Site ID : PR-WC-06-D1-L50-133

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual
Mercury	7/20/2017	0.049	0.037	--	MG/KG	

Peconic River Post-Excavation Confirmatory Sediment Sample Data
Area WC-06
July 19th and July 20th, 2017

Site ID : PR-WC-06-D1-L50-139

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual
Mercury	7/19/2017	0.022	0.039	--	MG/KG	J

Site ID : PR-WC-06-D1-L50-141

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual
Mercury	7/19/2017	0.074	0.037	--	MG/KG	

Site ID : PR-WC-06-D1-L50-143A

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual
Americium-241	7/19/2017	-0.0544	0.201	0.12	PCI/G	U
Aroclor 1016	7/19/2017	41	41	--	UG/KG	U
Aroclor 1221	7/19/2017	41	41	--	UG/KG	U
Aroclor 1232	7/19/2017	41	41	--	UG/KG	U
Aroclor 1242	7/19/2017	41	41	--	UG/KG	U
Aroclor 1248	7/19/2017	41	41	--	UG/KG	U
Aroclor 1254	7/19/2017	41	41	--	UG/KG	U
Aroclor 1260	7/19/2017	41	41	--	UG/KG	U
Beryllium-7	7/19/2017	0.0161	0.426	0.337	PCI/G	U
Cesium-134	7/19/2017	0.0332	0.107	0.016	PCI/G	U
Cesium-137	7/19/2017	0.146	0.0639	0.0664	PCI/G	
Co-60	7/19/2017	-0.00124	0.0684	0.0588	PCI/G	U
Cobalt-57	7/19/2017	0.0124	0.0431	0.0256	PCI/G	U
Europium-152	7/19/2017	-0.275	0.857	0.508	PCI/G	U
Europium-154	7/19/2017	0.0364	0.451	0.0752	PCI/G	U
Europium-155	7/19/2017	-0.0725	0.231	0.139	PCI/G	U
Manganese-54	7/19/2017	-0.0167	0.0764	0.0442	PCI/G	U
Mercury	7/19/2017	0.026	0.038	--	MG/KG	J
Sodium-22	7/19/2017	0.00478	0.0495	0.0255	PCI/G	U
Total PCB	7/19/2017	41	41	--	UG/KG	U
Zinc-65	7/19/2017	-0.0724	0.206	0.123	PCI/G	U

Site ID : PR-WC-06-D1-L50-145A

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual
Mercury	7/19/2017	0.056	0.039	--	MG/KG	

U = Not detected.
J = Estimated value.

Peconic River Sediment Waste Data
Area WC-06
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Site ID : WC06-SS-001

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual	Method *
1,1-Dichloroethylene	7/25/2017	50	50	--	UG/L	U	8260C/1311
1,2-Dichloroethane	7/25/2017	50	50	--	UG/L	U	8260C/1311
2,4,5-Trichlorophenol	7/25/2017	50	50	--	UG/L	U	8270D/1311
2,4,6-Trichlorophenol	7/25/2017	50	50	--	UG/L	U	8270D/1311
2,4-Dinitrotoluene	7/25/2017	50	50	--	UG/L	U	8270D/1311
8260 TVOC	7/25/2017	0	0	--	UG/L		8260C/1311
Americium-241	7/25/2017	0.0422	0.33	0.227	PCI/G	U	901.1
Arsenic	7/25/2017	20	20	--	UG/L	U	6010C/1311
Barium	7/25/2017	330	100	--	UG/L		6010C/1311
Benzene	7/25/2017	50	50	--	UG/L	U	8260C/1311
Beryllium-7	7/25/2017	0.892	0.913	0.779	PCI/G	U	901.1
Cadmium	7/25/2017	5.6	10	--	UG/L	B	6010C/1311
Carbon tetrachloride	7/25/2017	50	50	--	UG/L	U	8260C/1311
Cesium-134	7/25/2017	0.0256	0.242	0.0322	PCI/G	U	901.1
Cesium-137	7/25/2017	1.87	0.0448	0.288	PCI/G		901.1
Chlorobenzene	7/25/2017	50	50	--	UG/L	U	8260C/1311
Chloroform	7/25/2017	50	50	--	UG/L	U	8260C/1311
Chromium	7/25/2017	12	20	--	UG/L	B	6010C/1311
Co-60	7/25/2017	0.0429	0.119	0.0275	PCI/G	U	901.1
Cobalt-57	7/25/2017	0.0152	0.101	0.0342	PCI/G	U	901.1
Europium-152	7/25/2017	0.361	0.414	0.27	PCI/G	U	901.1
Europium-154	7/25/2017	0.169	1.19	0.21	PCI/G	U	901.1
Europium-155	7/25/2017	0.0493	0.496	0.24	PCI/G	U	901.1
Hexachlorobenzene	7/25/2017	50	50	--	UG/L	U	8270D/1311
Hexachlorobutadiene	7/25/2017	50	50	--	UG/L	U	8270D/1311
Hexachloroethane	7/25/2017	50	50	--	UG/L	U	8270D/1311
Lead	7/25/2017	12	20	--	UG/L	B	6010C/1311
m,p-Cresol	7/25/2017	100	100	--	UG/L	U	8270D/1311
Manganese-54	7/25/2017	0.0635	0.197	0.116	PCI/G	U	901.1
Mercury	7/25/2017	0.84	1	--	UG/L	B	7470A/1311
Methyl ethyl ketone	7/25/2017	50	50	--	UG/L	U	8260C/1311
Nitrobenzene	7/25/2017	50	50	--	UG/L	U	8270D/1311
o-Cresol	7/25/2017	50	50	--	UG/L	U	8270D/1311
p-Dichlorobenzene	7/25/2017	50	50	--	UG/L	U	8270D/1311
PCP	7/25/2017	250	250	--	UG/L	U	8270D/1311
Pyridine	7/25/2017	100	100	--	UG/L	U	8270D/1311
Selenium	7/25/2017	80	80	--	UG/L	U	6010C/1311
Silver	7/25/2017	20	20	--	UG/L	U	6010C/1311
Sodium-22	7/25/2017	0.0545	0.115	0.0706	PCI/G	U	901.1
Tetrachloroethylene	7/25/2017	50	50	--	UG/L	U	8260C/1311
Trichloroethylene	7/25/2017	50	50	--	UG/L	U	8260C/1311
Vinyl chloride	7/25/2017	100	100	--	UG/L	U	8260C/1311
Zinc-65	7/25/2017	0.254	0.232	0.172	PCI/G		901.1

Site ID : WC06-SS-005

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual	Method

Peconic River Sediment Waste Data
Area WC-06
July 25th - 27th, 2017

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual	Method *
1,1-Dichloroethylene	7/26/2017	50	50	--	UG/L	U	8260C/1311
1,2-Dichloroethane	7/26/2017	50	50	--	UG/L	U	8260C/1311
2,4,5-Trichlorophenol	7/26/2017	50	50	--	UG/L	U	8270D/1311
2,4,6-Trichlorophenol	7/26/2017	50	50	--	UG/L	U	8270D/1311
2,4-Dinitrotoluene	7/26/2017	50	50	--	UG/L	U	8270D/1311
8260 TVOC	7/26/2017	0	0	--	UG/L		8260C/1311
Americium-241	7/26/2017	0.122	0.462	0.275	PCI/G	U	901.1
Arsenic	7/26/2017	20	20	--	UG/L	U	6010C/1311
Barium	7/26/2017	230	100	--	UG/L		6010C/1311
Benzene	7/26/2017	50	50	--	UG/L	U	8260C/1311
Beryllium-7	7/26/2017	-0.0316	1.16	0.903	PCI/G	U	901.1
Bismuth-214	7/26/2017	0.593	0.0972	0.187	PCI/G		901.1
Cadmium	7/26/2017	6.4	10	--	UG/L	B	6010C/1311
Carbon tetrachloride	7/26/2017	50	50	--	UG/L	U	8260C/1311
Cesium-134	7/26/2017	-0.00349	0.252	0.0095	PCI/G	U	901.1
Cesium-137	7/26/2017	1.2	0.0948	0.24	PCI/G		901.1
Chlorobenzene	7/26/2017	50	50	--	UG/L	U	8260C/1311
Chloroform	7/26/2017	50	50	--	UG/L	U	8260C/1311
Chromium	7/26/2017	6.6	20	--	UG/L	B	6010C/1311
Co-60	7/26/2017	-0.0554	0.213	0.184	PCI/G	U	901.1
Cobalt-57	7/26/2017	0.023	0.124	0.0539	PCI/G	U	901.1
Europium-152	7/26/2017	0.568	0.547	0.44	PCI/G		901.1
Europium-154	7/26/2017	-0.603	1.74	1.53	PCI/G	U	901.1
Europium-155	7/26/2017	0.111	0.422	0.243	PCI/G	U	901.1
Hexachlorobenzene	7/26/2017	50	50	--	UG/L	U	8270D/1311
Hexachlorobutadiene	7/26/2017	50	50	--	UG/L	U	8270D/1311
Hexachloroethane	7/26/2017	50	50	--	UG/L	U	8270D/1311
Lead	7/26/2017	8.4	20	--	UG/L	B	6010C/1311
m,p-Cresol	7/26/2017	100	100	--	UG/L	U	8270D/1311
Manganese-54	7/26/2017	0.00132	0.143	0.074	PCI/G	U	901.1
Mercury	7/26/2017	0.47	1	--	UG/L	B	7470A/1311
Methyl ethyl ketone	7/26/2017	50	50	--	UG/L	U	8260C/1311
Nitrobenzene	7/26/2017	50	50	--	UG/L	U	8270D/1311
o-Cresol	7/26/2017	50	50	--	UG/L	U	8270D/1311
p-Dichlorobenzene	7/26/2017	50	50	--	UG/L	U	8270D/1311
PCP	7/26/2017	250	250	--	UG/L	U	8270D/1311
Pyridine	7/26/2017	100	100	--	UG/L	U	8270D/1311
Selenium	7/26/2017	80	80	--	UG/L	U	6010C/1311
Silver	7/26/2017	20	20	--	UG/L	U	6010C/1311
Sodium-22	7/26/2017	0.08	0.0842	0.061	PCI/G	U	901.1
Tetrachloroethylene	7/26/2017	50	50	--	UG/L	U	8260C/1311
Trichloroethylene	7/26/2017	50	50	--	UG/L	U	8260C/1311
Vinyl chloride	7/26/2017	100	100	--	UG/L	U	8260C/1311
Zinc-65	7/26/2017	0	0.322	0.0568	PCI/G	U	901.1

Site ID : WC06-SS-010

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual	Method
1,1-Dichloroethylene	7/26/2017	50	50	--	UG/L	U	8260C/1311
1,2-Dichloroethane	7/26/2017	50	50	--	UG/L	U	8260C/1311

Peconic River Sediment Waste Data
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Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual	Method *
2,4,5-Trichlorophenol	7/26/2017	50	50	--	UG/L	U	8270D/1311
2,4,6-Trichlorophenol	7/26/2017	50	50	--	UG/L	U	8270D/1311
2,4-Dinitrotoluene	7/26/2017	50	50	--	UG/L	U	8270D/1311
8260 TVOC	7/26/2017	0	0	--	UG/L		8260C/1311
Americium-241	7/26/2017	0.0523	0.426	0.252	PCI/G	U	901.1
Arsenic	7/26/2017	20	20	--	UG/L	U	6010C/1311
Barium	7/26/2017	210	100	--	UG/L		6010C/1311
Benzene	7/26/2017	50	50	--	UG/L	U	8260C/1311
Beryllium-7	7/26/2017	0.206	1.21	0.991	PCI/G	U	901.1
Cadmium	7/26/2017	5.2	10	--	UG/L	B	6010C/1311
Carbon tetrachloride	7/26/2017	50	50	--	UG/L	U	8260C/1311
Cesium-134	7/26/2017	0.0741	0.233	0.154	PCI/G	U	901.1
Cesium-137	7/26/2017	3.03	0.095	0.418	PCI/G		901.1
Chlorobenzene	7/26/2017	50	50	--	UG/L	U	8260C/1311
Chloroform	7/26/2017	50	50	--	UG/L	U	8260C/1311
Chromium	7/26/2017	20	20	--	UG/L	U	6010C/1311
Co-60	7/26/2017	0.0492	0.0604	0.0405	PCI/G	U	901.1
Cobalt-57	7/26/2017	0.0323	0.0963	0.0576	PCI/G	U	901.1
Europium-152	7/26/2017	0.281	1.48	0.252	PCI/G	U	901.1
Europium-154	7/26/2017	0.313	1.01	0.224	PCI/G	U	901.1
Europium-155	7/26/2017	0.0898	0.426	0.143	PCI/G	U	901.1
Hexachlorobenzene	7/26/2017	50	50	--	UG/L	U	8270D/1311
Hexachlorobutadiene	7/26/2017	50	50	--	UG/L	U	8270D/1311
Hexachloroethane	7/26/2017	50	50	--	UG/L	U	8270D/1311
Lead	7/26/2017	20	20	--	UG/L	U	6010C/1311
m,p-Cresol	7/26/2017	100	100	--	UG/L	U	8270D/1311
Manganese-54	7/26/2017	0	0.136	0.0163	PCI/G	U	901.1
Mercury	7/26/2017	0.36	1	--	UG/L	B	7470A/1311
Methyl ethyl ketone	7/26/2017	50	50	--	UG/L	U	8260C/1311
Nitrobenzene	7/26/2017	50	50	--	UG/L	U	8270D/1311
o-Cresol	7/26/2017	50	50	--	UG/L	U	8270D/1311
p-Dichlorobenzene	7/26/2017	50	50	--	UG/L	U	8270D/1311
PCP	7/26/2017	250	250	--	UG/L	U	8270D/1311
Pyridine	7/26/2017	100	100	--	UG/L	U	8270D/1311
Selenium	7/26/2017	80	80	--	UG/L	U	6010C/1311
Silver	7/26/2017	20	20	--	UG/L	U	6010C/1311
Sodium-22	7/26/2017	-0.00529	0.109	0.0549	PCI/G	U	901.1
Tetrachloroethylene	7/26/2017	50	50	--	UG/L	U	8260C/1311
Trichloroethylene	7/26/2017	50	50	--	UG/L	U	8260C/1311
Vinyl chloride	7/26/2017	100	100	--	UG/L	U	8260C/1311
Zinc-65	7/26/2017	0.0646	0.437	0.249	PCI/G	U	901.1

Site ID : WC06-SS-015

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual	Method
1,1-Dichloroethylene	7/27/2017	50	50	0	UG/L	U	8260C/1311
1,2-Dichloroethane	7/27/2017	50	50	0	UG/L	U	8260C/1311
2,4,5-Trichlorophenol	7/27/2017	50	50	0	UG/L	U	8270D/1311
2,4,6-Trichlorophenol	7/27/2017	50	50	0	UG/L	U	8270D/1311
2,4-Dinitrotoluene	7/27/2017	50	50	0	UG/L	U	8270D/1311

Peconic River Sediment Waste Data
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Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual	Method *
8260 TVOC	7/27/2017	0	0	0	UG/L		8260C/1311
Americium-241	7/27/2017	0.256	0.212	0.172	PCI/G		901.1
Arsenic	7/27/2017	20	20	0	UG/L	U	6010C/1311
Barium	7/27/2017	370	100	0	UG/L		6010C/1311
Benzene	7/27/2017	50	50	0	UG/L	U	8260C/1311
Beryllium-7	7/27/2017	0.194	0.991	0.764	PCI/G	U	901.1
Cadmium	7/27/2017	14	10	0	UG/L		6010C/1311
Carbon tetrachloride	7/27/2017	50	50	0	UG/L	U	8260C/1311
Cesium-134	7/27/2017	0.0131	0.268	0.0167	PCI/G	U	901.1
Cesium-137	7/27/2017	1.72	0.0788	0.279	PCI/G		901.1
Chlorobenzene	7/27/2017	50	50	0	UG/L	U	8260C/1311
Chloroform	7/27/2017	50	50	0	UG/L	U	8260C/1311
Chromium	7/27/2017	20	20	0	UG/L		6010C/1311
Co-60	7/27/2017	0.00969	0.119	0.00872	PCI/G	U	901.1
Cobalt-57	7/27/2017	0.0233	0.0914	0.054	PCI/G	U	901.1
Europium-152	7/27/2017	0.319	1.39	0.287	PCI/G	U	901.1
Europium-154	7/27/2017	0.278	0.664	0.426	PCI/G	U	901.1
Europium-155	7/27/2017	0.0907	0.507	0.299	PCI/G	U	901.1
Hexachlorobenzene	7/27/2017	50	50	0	UG/L	U	8270D/1311
Hexachlorobutadiene	7/27/2017	50	50	0	UG/L	U	8270D/1311
Hexachloroethane	7/27/2017	50	50	0	UG/L	U	8270D/1311
Lead	7/27/2017	17	20	0	UG/L	B	6010C/1311
m,p-Cresol	7/27/2017	100	100	0	UG/L	U	8270D/1311
Manganese-54	7/27/2017	0.0449	0.146	0.0855	PCI/G	U	901.1
Mercury	7/27/2017	3.4	1	0	UG/L		7470A/1311
Methyl ethyl ketone	7/27/2017	50	50	0	UG/L	U	8260C/1311
Nitrobenzene	7/27/2017	50	50	0	UG/L	U	8270D/1311
o-Cresol	7/27/2017	50	50	0	UG/L	U	8270D/1311
p-Dichlorobenzene	7/27/2017	50	50	0	UG/L	U	8270D/1311
PCP	7/27/2017	250	250	0	UG/L	U	8270D/1311
Potassium-40	7/27/2017	6.83	0.654	1.71	PCI/G		901.1
Pyridine	7/27/2017	100	100	--	UG/L	U	8270D/1311
Selenium	7/27/2017	80	80	--	UG/L	U	6010C/1311
Silver	7/27/2017	18	20	--	UG/L	B	6010C/1311
Sodium-22	7/27/2017	-0.0142	0.153	0.0817	PCI/G	U	901.1
Tetrachloroethylene	7/27/2017	50	50	--	UG/L	U	8260C/1311
Trichloroethylene	7/27/2017	50	50	--	UG/L	U	8260C/1311
Vinyl chloride	7/27/2017	100	100	--	UG/L	U	8260C/1311
Zinc-65	7/27/2017	0.019	0.433	0.241	PCI/G	U	901.1

Site ID : WC06-SS-020

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual	Method
1,1-Dichloroethylene	7/27/2017	50	50	--	UG/L	U	8260C/1311
1,2-Dichloroethane	7/27/2017	50	50	--	UG/L	U	8260C/1311
2,4,5-Trichlorophenol	7/27/2017	50	50	--	UG/L	U	8270D/1311
2,4,6-Trichlorophenol	7/27/2017	50	50	--	UG/L	U	8270D/1311
2,4-Dinitrotoluene	7/27/2017	50	50	--	UG/L	U	8270D/1311
8260 TVOC	7/27/2017	0	0	--	UG/L		8260C/1311
Americium-241	7/27/2017	0.247	0.247	0.205	PCI/G		901.1

Peconic River Sediment Waste Data
Area WC-06
July 25th - 27th, 2017

Chemical Name	Sample Date	Value	Detlim	Error	Units	Qual	Method *
Arsenic	7/27/2017	20	20	--	UG/L	U	6010C/1311
Barium	7/27/2017	280	100	--	UG/L		6010C/1311
Benzene	7/27/2017	50	50	--	UG/L	U	8260C/1311
Beryllium-7	7/27/2017	-0.595	1.32	1.11	PCI/G	U	901.1
Cadmium	7/27/2017	7	10	--	UG/L	B	6010C/1311
Carbon tetrachloride	7/27/2017	50	50	--	UG/L	U	8260C/1311
Cesium-134	7/27/2017	0.0506	0.203	0.171	PCI/G	U	901.1
Cesium-137	7/27/2017	2.26	0.0378	0.319	PCI/G		901.1
Chlorobenzene	7/27/2017	50	50	--	UG/L	U	8260C/1311
Chloroform	7/27/2017	50	50	--	UG/L	U	8260C/1311
Chromium	7/27/2017	20	20	--	UG/L	U	6010C/1311
Co-60	7/27/2017	0.00985	0.102	0.0843	PCI/G	U	901.1
Cobalt-57	7/27/2017	0.0241	0.098	0.0493	PCI/G	U	901.1
Europium-152	7/27/2017	0.307	0.932	0.48	PCI/G	U	901.1
Europium-154	7/27/2017	-0.633	1.24	1.11	PCI/G	U	901.1
Europium-155	7/27/2017	-0.15	0.511	0.306	PCI/G	U	901.1
Hexachlorobenzene	7/27/2017	50	50	--	UG/L	U	8270D/1311
Hexachlorobutadiene	7/27/2017	50	50	--	UG/L	U	8270D/1311
Hexachloroethane	7/27/2017	50	50	--	UG/L	U	8270D/1311
Lead	7/27/2017	6.4	20	--	UG/L	B	6010C/1311
m,p-Cresol	7/27/2017	100	100	--	UG/L	U	8270D/1311
Manganese-54	7/27/2017	-0.0736	0.175	0.105	PCI/G	U	901.1
Mercury	7/27/2017	0.47	1	--	UG/L	B	7470A/1311
Methyl ethyl ketone	7/27/2017	50	50	--	UG/L	U	8260C/1311
Nitrobenzene	7/27/2017	50	50	--	UG/L	U	8270D/1311
o-Cresol	7/27/2017	50	50	--	UG/L	U	8270D/1311
p-Dichlorobenzene	7/27/2017	50	50	--	UG/L	U	8270D/1311
PCP	7/27/2017	250	250	--	UG/L	U	8270D/1311
Potassium-40	7/27/2017	6.83	0.547	1.59	PCI/G		901.1
Pyridine	7/27/2017	100	100	--	UG/L	U	8270D/1311
Selenium	7/27/2017	80	80	--	UG/L	U	6010C/1311
Silver	7/27/2017	20	20	--	UG/L	U	6010C/1311
Sodium-22	7/27/2017	-0.0357	0.157	0.0893	PCI/G	U	901.1
Tetrachloroethylene	7/27/2017	50	50	--	UG/L	U	8260C/1311
Trichloroethylene	7/27/2017	50	50	--	UG/L	U	8260C/1311
Vinyl chloride	7/27/2017	100	100	--	UG/L	U	8260C/1311
Zinc-65	7/27/2017	0.0844	0.3	0.174	PCI/G	U	901.1

Notes:

U = Not detected.

B = The reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL), but greater than or equal to the Instrument Detection Limit (IDL).

* Method 1311 is TCLP extraction.

Attachment 3
Data Usability Summary Report

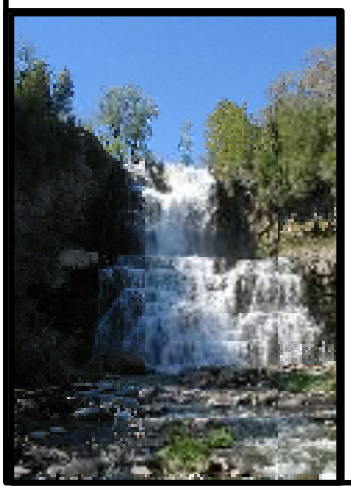
Data Validation/Verification Report

Site ID: Brookhaven National Lab
Upton, New York

Prepared for:

LAND Remediation, Inc.
74 Hudson River Road
Waterford, New York

September 2017 Revised
August 2017



Prepared by:

SGD Environmental Services
Cazenovia, New York

2168.005

Data Validation/Verification Report

Site ID: Brookhaven National Lab
Upton, New York

Prepared for:
LAND Remediation, Inc.
74 Hudson River Road
Waterford, New York 12188

September 12, 2017 Revised
August 22, 2017

Prepared by:
SGD Environmental Services
2063 Stanley Road
Cazenovia, New York 13035

TABLE OF CONTENTS

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1.0 Introduction

SGD Environmental Services (SGD Environmental) (Cazenovia, New York) was retained by LAND Remediation, Inc. (LAND) located in Waterford, New York to review analytical data generated from LAND sampling efforts at the Brookhaven National Lab, located in Upton, New York. This report represents the verification and/or the validation of the analyses of these samples. As required by the Quality Assurance Project Plan, 100% of the samples required data verification and 10% required full data validation.

1.1 Field sampling summary

The table below provides a summary of the samples collected during the July 2017 sampling event. The samples collected by LAND were analyzed by TestAmerica in Earth City, Missouri for mercury using Solid Waste (SW) 846 Method 7471B.

Sampling matrix summary.

LAND field identification	*Laboratory identification*	*Validated samples*	*Notes*
SDG 38996			
PR-WC-06-D1-L50-04*	38996-001*	**	MS/MSD/Dup
PR-WC-06-D1-L50-11	38996-002		
PR-WC-06-D1-L50-32	38996-004		
PR-WC-06-D1-L50-36	38996-005		
PR-WC-06-D1-L50-127	38996-006		
PR-WC-06-D1-L50-128	38996-007		
PR-WC-06-D1-L50-123	38996-008		
PR-WC-06-D1-L50-139	38996-009		
PR-WC-06-D1-L50-141*	38996-010*		
PR-WC-06-D1-L50-145A	38996-011		
PR-WC-06-D1-L50-143A	38996-012	**	MS/MSD/Dup
PR-WC-06-FB	38996-013		FB
SDG 38998			
PR-WC-06-D1-L50-115	38998-001		
PR-WC-06-D1-L50-117	38998-002		
PR-WC-06-D1-L50-111	38998-003		
PR-WC-06-D1-L50-133	38998-004		
PR-WC-06-D1-L50-113	38998-005		
PR-WC-06-D1-L50-108	38998-006		
PR-WC-06-D1-L50-106	38998-007		
PR-WC-06-D1-L50-103	38998-011	**	MS/MSD/Dup
PR-WC-06-D1-L50-101*	38998-012*		
PR-WC-06-D1-L50-92	38998-013		
PR-WC-06-D1-L50-91	38998-014		
PR-WC-06-D1-L50-80	38998-015		
PR-WC-06-D1-L50-87	38998-016		
PR-WC-06-D1-L50-49	38998-017		
PR-WC-06-D1-L50-62	38998-018		
PR-WC-06-D1-L50-60	38998-019		
PR-WC-06-FB	38998-020		FB

Notes:

* Samples were also analyzed for polychlorinated biphenyls (PCBs) (Method 8082) and Gamma Spectrometry.

** The marked samples (**) underwent full data validation; the remaining (unmarked) samples underwent verification.

MS - Matrix spike / MSD - Matrix spike duplicate / Dup - Duplicate / FB - Field blank

Samples 38996-003 and 38998-008 through 38998-010 were not collected for mercury analyses.

1.2 Data validation process

The data contained in the laboratory sampling delivery groups (SDGs) were validated using guidance and quality control (QC) criteria identified in the following document:

- *USEPA Hazardous Waste Support Section Mercury and Cyanide Data Validation. SOP No. HW-3c Revision 0. July 2015.*

Areas reviewed included completeness of data, chain of custody, holding times, preservation, blank spike/laboratory control samples, matrix spike/matrix spike duplicate (MS/MSD) samples, laboratory duplicates, field duplicates, preparation/calibration blanks, initial and continuing calibrations, reagent traceability, and detection limits. The summary of this review is presented in Section 2 of this report.

1.3 Chain of custody and holding times

Tracking documentation (*e.g*., chains of custody, laboratory sample receipt documents, *etc*.) accompanied the samples and was included in the laboratory deliverable. The following observations relative to the samples collected and requested analyses were noted:

- Samples in the SDG were reported as received by the laboratory on ice, at 4.2° C and 4.6°C. No qualification of the data was required.

- The samples, were collected, received, prepared, and analyzed within the required 28 day holding time. No qualification of the data was required.

2.0 Mercury verification/validation

2.1 Data completeness and deliverables

A narrative summarizing the analyses was included in the SDGs prepared by the laboratory. As previously noted, the samples were analyzed for mercury using Method 7471B. The results were summarized on standardized laboratory *1A-IN Inorganic Analysis Data Sheet Metals* forms appended to this report (Appendix A). In summary, based on the scope of the validation efforts as described herein, the data were deemed complete and useable; no data were qualified or rejected.

2.2 Initial and continuing calibration verifications

Reporting forms for the initial and continuing calibrations were prepared by the laboratory. A six-point linear calibration was prepared and analyzed and the correlation coefficient for initial calibration (IC) analytes met established criteria and, therefore, no qualification with respect to the IC analytes was required.

The initial and continuing calibration verifications (ICVs/CCVs) were analyzed at the method required frequency and met the method criteria for accuracy as measured by percent recovery. Therefore, no qualification of the data with respect to ICVs/CCVs was required.

2.3 Blank contamination

Initial calibration blanks and continuing calibration blanks (ICBs/CCBs) were analyzed at the method required frequency; mercury was not detected above the method detection limit. Two preparation blanks for the two digestion preparation batches were prepared and analyzed; mercury was not detected above the method detection limit. Two field blanks were submitted (38996-013 and 38998-020); mercury was not detected above the method detection limit. As such, qualification of the data with respect to blank contamination was not required.

2.4 Laboratory Duplicate samples

Laboratory duplicate samples were prepared and analyzed at the method required frequency. The duplicate samples were field duplicates from 38996-001, 38996-012, and 38998-011. Precision, as measured by the relative percent difference (RPD), for the duplicates met method criteria. Therefore, no qualification of the data with respect to the laboratory duplicate samples was required.

2.5 Matrix Spike/Matrix Spike Duplicate samples

The accuracy and precision, as measured by the spike percent recoveries and RPDs for the MS/MSD were within method limits for mercury and, therefore, no qualification of the data was required.

2.6 Laboratory Control Samples

The accuracy, as measured by the spike percent recoveries for the laboratory control samples were within the laboratory control limits (percent recovery) for mercury, therefore, no qualification of the data was required.

2.7 Compound quantitation

As required, ten percent of the data were subjected to full data validation. No transcription/calculation errors between the raw data and the reported data were not identified in the samples reviewed; qualification of the data was not required.

2.8 Field Duplicates

The field duplicate samples were collected at 38996-001, 38996-012, and 38998-011. These also served as the laboratory duplicates. The RPD between the parent sample and the duplicate were with acceptable limits and, therefore, no qualification of the data were necessary.

2.9 Percent Solids

Percent solids were prepared and calculated for each of the soil samples and the results were greater than 50 percent solids, therefore, qualification of the data was not required.

Attachment 4
Photo Log

Post Excavation Facing South

Sediment Transfer to Pad

Excavation Facing South

Sediment Staging/Packaging Area

WellPoint System Facing East

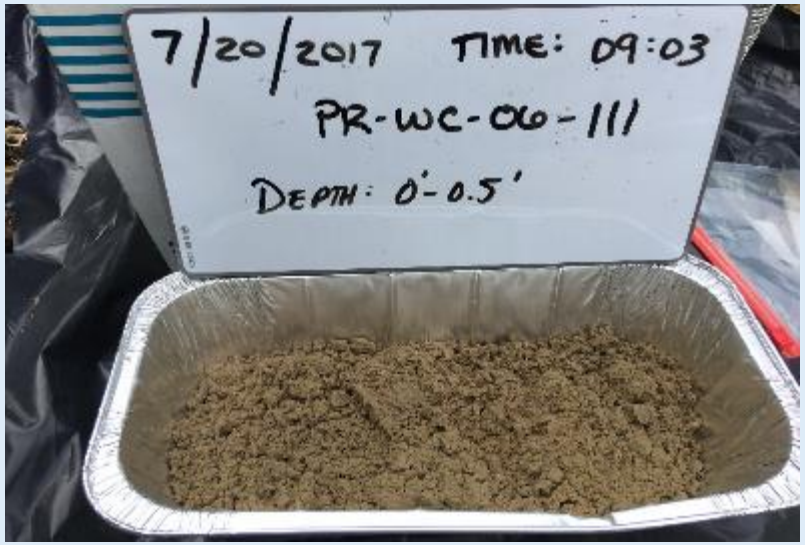
Ongoing Excavation and Survey

Post Excavation Restored Surface

Loading Sediment for Transport to Pad

Temporary Water Storage Pad

Temporary Sediment Staging Area



Typical all locations – medium to fine sand

Confirmatory Soil Sampling

Waste Package Filling

Waste Lock (amending agent)

Field testing moisture content of sediment

Sealing Waste Package

Temporary Outdoor Storage- August 2017

Temporary Indoor Storage Prior to Disposal
August 2017

Loading of Supersacks
November 2017

Transport of Supersack for Off-Site Disposal
At Energy Solutions – November 2017

Attachment 5
Waste Disposal Documentation

0700hrs - 1430hrs

FORM 540 — EnergySolutions, LLC

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

1. EMERGENCY TELEPHONE NUMBER (Include Area Code): (631) 344-2222

ORGANIZATION: Brookhaven National Laboratory

2. IS THIS AN "EXCLUSIVE USE" SHIPMENT? ☐ YES ☑ NO

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST ====> 3

4. DOES EPA REGULATED WASTE REQUIRING A MANIFEST ACCOMPANY THIS SHIPMENT? ☐ YES ☑ NO
If "Yes," provide Manifest Number ======>

EPA MANIFEST NUMBER:

5. SHIPPER – NAME AND FACILITY
Brookhaven National Laboratory
for the Department of Energy
Bldg. 860
Upton, NY 11973

SHIPPER I.D. NUMBER: 7314-08-0011
☐ COLLECTOR
☐ PROCESSOR
☑ GENERATOR TYPE (Specify)

Utah Generator Site Access Permit No.: 0112 001 215
SHIPMENT NUMBER: 7314-08-0011

CONTACT: Michael F. Clancy
TELEPHONE NUMBER (Include Area Code): (631) 344-7651

6. CARRIER – Name and Address
RSB Logistics
2425 South 4th Street
Paducah, KY 42003
Truck # - 56913
Trailer # - F49212

EPA I.D. NUMBER: WAR000012005
SHIPPING DATE: 11/01/2017

CONTACT: Ronda Darnell
TELEPHONE (Include Area Code): (270) 444-8604

SIGNATURE – Authorized carrier acknowledging waste receipt
DATE: 11/1/17

7. FORM 540 AND 540A — PAGE 1 OF 1 PAGE(S)
FORM 541 AND 541A — 2 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

9. CONSIGNEE - Name and Facility
EnergySolutions, LLC
Clive Disposal Site (Bulk Waste Facility)
Interstate 80, Exit 49
Clive, UT 84029
L 127867

SIGNATURE – Authorized consignee acknowledging waste receipt

8. MANIFEST NUMBER (Use this number on all continuation pages): 7314-08-0011

CONTACT: Security Department
TELEPHONE (Include Area Code): (801)649-2175
DATE: 11/6/17

10. CERTIFICATION
This is to certify that the herein-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. This also certifies that the materials are classified, packaged, marked, and labeled and are in proper condition for transportation and disposal as described in accordance with the requirements of 10 CFR Parts 20 and 61, or equivalent state regulations.

AUTHORIZED SIGNATURE
TITLE: Shipper
DATE: 11/1/17

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES			16. TOTAL PACKAGE ACTIVITY MBq	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
DOT Non-Regulated Material Strong Tight Polyfiber Sack	NA	NA	Solid Metal Oxide	Am-241	Cs-137	K-40	4.3445E+00	1.1742E-01	NA	11885 LBS; 189 FT3	R58054-01/01
DOT Non-Regulated Material Strong Tight Polyfiber Sack	NA	NA	Solid Metal Oxide	Am-241	Cs-137	K-40	4.7338E+00	1.2794E-01	NA	12950 LBS; 189 FT3	R58062-01/01
DOT Non-Regulated Material Strong Tight Polyfiber Sack	NA	NA	Solid Metal Oxide	Am-241	Cs-137	K-40	4.6202E+00	1.2487E-01	NA	12635 LBS; 189 FT3	R58063-01/01

FOR CONSIGNEE USE ONLY

___ Record Waste Description Inadequate
___ Contamination or Leakage Detected
___ Unexpected Exposure Rates Detected
___ Labels, Markings, etc. Inadequate
___ Container Integrity Inadequate
___ Other
✓ No Violations Detected on this Shipment

20. TERMS AND CONDITIONS

A. HAZARDOUS MATERIALS: Generator represents & warrants that Waste Material __ is (or) ✓ is not a hazardous waste as defined in 40 CFR 261. Where the material is a hazardous waste, this shipment is also accompanied by a separate and completed hazardous waste manifest, along with the appropriate land-disposal restriction notice and/or certification as required by 40 CFR 268.1.

B. TITLE: Upon acceptance at the disposal site by EnergySolutions, LLC, and all appropriate regulatory authorities, title to the Waste Material which conforms to Generator's representations herein shall thereupon transfer from Generator and be vested in EnergySolutions, LLC

C. WASTE MATERIAL: Generator represents and warrants that all data set forth in this (UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST) are true and correct in all respects and in accordance with all applicable governmental laws, rules, regulations and EnergySolutions LLC's facility license.

D. INDEMNIFICATION: Generator agrees to indemnify EnergySolutions, LLC, its officers, employees and agents against all losses and liability whatsoever if such losses or liability results from the failure of the Waste Material to conform in all material respects to the data supplied on the (UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST,) or if this shipment fails to meet the standards prescribed by the Department of Transportation or any governmental agency having jurisdiction over such matters.

FORM 540 (03-06)

Reviewed By (of Brookhaven Science Associates) Date 11/1/17 on behalf of the U.S. Department of Energy at Brookhaven National Laboratory

FORM 540 — EnergySolutions, LLC

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

1. EMERGENCY TELEPHONE NUMBER (Include Area Code): (631) 344-2222

ORGANIZATION: Brookhaven National Laboratory

2. IS THIS AN "EXCLUSIVE USE" SHIPMENT? ☐ YES ☑ NO

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST ==> 3

4. DOES EPA REGULATED WASTE REQUIRING A MANIFEST ACCOMPANY THIS SHIPMENT? ☐ YES ☑ NO
If "Yes," provide Manifest Number ==>

EPA MANIFEST NUMBER:

5. SHIPPER – NAME AND FACILITY
Brookhaven National Laboratory
for the Department of Energy
Bldg. 880
Upton, NY 11973

SHIPPER I.D. NUMBER: 7314-08-0012
☐ COLLECTOR
☐ PROCESSOR
☑ GENERATOR TYPE (Specify)

Utah Generator Site Access Permit No.: 0112 001 215
SHIPMENT NUMBER: 7314-08-0012

CONTACT: Michael F. Clancy
TELEPHONE NUMBER (Include Area Code): (631) 344-7651

6. CARRIER – Name and Address
RSB Logistics
2425 South 4th Street
Paducah, KY 42003
Truck # -50216
Trailer # -F48214

EPA I.D. NUMBER: WAR000012005
SHIPPING DATE: 11/01/2017

CONTACT: Ronda Darnell
TELEPHONE (Include Area Code): (270) 444-6804

SIGNATURE – Authorized carrier acknowledging waste receipt: William E Reed
DATE: 11-1-2017

7. FORM 540 AND 540A — PAGE 1 OF 1 PAGE(S)
FORM 541 AND 541A — 2 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): 7314-08-0012

9. CONSIGNEE - Name and Facility
EnergySolutions, LLC
Clive Disposal Site (Bulk Waste Facility)
Interstate 80, Exit 49
Clive, UT 84029
L17860

CONTACT: Security Department
TELEPHONE (Include Area Code): (801)649-2175

SIGNATURE – Authorized consignee acknowledging waste receipt:
DATE: 11/6/17

10. CERTIFICATION
This is to certify that the herein-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. This also certifies that the materials are classified, packaged, marked, and labeled and are in proper condition for transportation and disposal as described in accordance with the requirements of 10 CFR Parts 20 and 61, or equivalent state regulations.

AUTHORIZED SIGNATURE:
TITLE: Shipper
DATE: 11/1/17

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES			16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
DOT Non-Regulated Material Strong Tight Poly Fiber Sack	NA	NA	Solid Metal Oxide	Am-241	Cs-137	K-40	4.6202E+00	1.2487E-01	NA	12630 LBS; 189 FT3	R58060-01/01
DOT Non-Regulated Material Strong Tight Polyfiber Sack	NA	NA	Solid Metal Oxide	Am-241	Cs-137	K-40	2.0542E+00	5.5520E-02	NA	13295 LBS; 189 FT3	R58061-01/01
DOT Non-Regulated Material Strong Tight Polyfiber Sack	NA	NA	Solid Metal Oxide	Am-241	Cs-137	K-40	4.5484E+00	1.2293E-01	NA	12445 LBS; 189 FT3	R58064-01/01

FOR CONSIGNEE USE ONLY

___ Record Waste Description Inadequate
___ Contamination or Leakage Detected
___ Unexpected Exposure Rates Detected
___ Labels, Markings, etc. Inadequate
___ Container Integrity Inadequate
___ Other
✓ No Violations Detected on this Shipment

20. TERMS AND CONDITIONS

A. HAZARDOUS MATERIALS: Generator represents & warrants that Waste Material __ is (or) ✓ is not a hazardous waste as defined in 40 CFR 261. Where the material is a hazardous waste, this shipment is also accompanied by a separate and completed hazardous waste manifest, along with the appropriate land-disposal restriction notice and/or certification as required by 40 CFR 268.1.

B. TITLE: Upon acceptance at the disposal site by EnergySolutions, LLC, and all appropriate regulatory authorities, title to the Waste Material which conforms to Generator's representations herein shall thereupon transfer from Generator and be vested in EnergySolutions, LLC

C. WASTE MATERIAL: Generator represents and warrants that all data set forth in this (UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST) are true and correct in all respects and in accordance with all applicable governmental laws, rules, regulations and EnergySolutions LLC's facility license.

D. INDEMNIFICATION: Generator agrees to indemnify EnergySolutions, LLC, its officers, employees and agents against all losses and liability whatsoever if such losses or liability results from the failure of the Waste Material to conform in all material respects to the data supplied on the (UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST,) or if this shipment fails to meet the standards prescribed by the Department of Transportation or any governmental agency having jurisdiction over such matters.

FORM 540 (03-06)

Reviewed By (of Brookhaven Science Associates) Date 11/1/17

on behalf of the U.S. Department of Energy at Brookhaven National Laboratory

302C L000006 10484

FORM 540

EnergySolutions, LLC

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

1. EMERGENCY TELEPHONE NUMBER (Include Area Code): (631) 344-2222

ORGANIZATION: Brookhaven National Laboratory

2. IS THIS AN "EXCLUSIVE USE" SHIPMENT? ☐ YES ☑ NO

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST ===> 3

4. DOES EPA REGULATED WASTE REQUIRING A MANIFEST ACCOMPANY THIS SHIPMENT? ☐ YES ☑ NO
If "Yes," provide Manifest Number ===>

EPA MANIFEST NUMBER

5. SHIPPER – NAME AND FACILITY
Brookhaven National Laboratory
for the Department of Energy
Bldg. 860
Upton, NY 11973

SHIPPER I.D. NUMBER: 7314-08-0013
☐ COLLECTOR
☐ PROCESSOR
☑ GENERATOR TYPE (Specify)

Utah Generator Site Access Permit No.: 0112 001 215
SHIPMENT NUMBER: 7314-08-0013

CONTACT: Michael F. Clancy
TELEPHONE NUMBER (Include Area Code): (631) 344-7651

6. CARRIER – Name and Address
Hittman Transportation Services, Inc. Truck # - 302C
1560 Bear Creek Road Trailer # - L000006
Oak Ridge, TN 37830

EPA I.D. NUMBER: TNR000034686
SHIPPING DATE: 11/02/2017
TELEPHONE (Include Area Code): (865) 220-5817

CONTACT: Jeff Packett
SIGNATURE – Authorized carrier acknowledging waste receipt
DATE: 11-2-17

7. FORM 540 AND 540A — PAGE 1 OF 1 PAGE(S)
FORM 541 AND 541A — 2 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): 7314-08-0013

9. CONSIGNEE - Name and Facility
EnergySolutions, LLC (Bulk Waste Facility) L-27866
Clive Disposal Site
Interstate 80, Exit 49
Clive, UT 84029

CONTACT: Security Department
TELEPHONE (Include Area Code): (801)649-2175

SIGNATURE – Authorized consignee acknowledging waste receipt
DATE: 11/6/17

10. CERTIFICATION
This is to certify that the herein-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. This also certifies that the materials are classified, packaged, marked, and labeled and are in proper condition for transportation and disposal as described in accordance with the requirements of 10 CFR Parts 20 and 61, or equivalent state regulations.

AUTHORIZED SIGNATURE
TITLE: Shipper
DATE: 11/2/17

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES			16. TOTAL PACKAGE ACTIVITY MBq	16. TOTAL PACKAGE ACTIVITY Ci	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
DOT Non-Regulated Material Strong Tight Polyfiber Sack	NA	NA	Solid Metal Oxide	Am-241	Cs-137	K-40	4.5521E+00	1.2303E-01	NA	12450 LBS; 189 FT3	R58047-01/01
DOT Non-Regulated Material Strong Tight Polyfiber Sack	NA	NA	Solid Metal Oxide	Am-241	Cs-137	K-40	5.0057E+00	1.3529E-01	NA	13695 LBS; 189 FT3	R58048-01/01
DOT Non-Regulated Material Strong Tight Polyfiber Sack	NA	NA	Solid Metal Oxide	Am-241	Cs-137	K-40	4.7752E+00	1.2906E-01	NA	13060 LBS; 189 FT3	R58049-01/01

FOR CONSIGNEE USE ONLY

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
✓ No Violations Detected on this Shipment

20. TERMS AND CONDITIONS

A. HAZARDOUS MATERIALS: Generator represents & warrants that Waste Material __ is (or) ✓ is not a hazardous waste as defined in 40 CFR 261. Where the material is a hazardous waste, this shipment is also accompanied by a seperate and completed hazardous waste manifest, along with the appropriate land-disposal restriction notice and/or certification as required by 40 CFR 268.1.

B. TITLE: Upon acceptance at the disposal site by EnergySolutions, LLC, and all appropriate regulatory authorities, title to the Waste Material which conforms to Generator's representations herein shall thereupon transfer from Generator and be vested in EnergySolutions, LLC

C. WASTE MATERIAL: Generator represents and warrants that all data set forth in this (UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST) are true and correct in all respects and in accordance with all applicable governmental laws, rules, regulations and EnergySolutions LLC's facility license

D. INDEMNIFICATION: Generator agrees to indemnify EnergySolutions, LLC, its officers, employees and agents against all losses and liability whatsoever if such losses or liability results from the failure of the Waste Material to conform in all material respects to the data supplied on the (UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST,) or if this shipment fails to meet the standards prescribed by the Department of Transportation or any governmental agency having jurisdiction over such matters.

FORM 540 (03-06)

Reviewed By (of Brookhaven Science Associates) 11/2/17 Date on behalf of the U.S. Department of Energy at Brookhaven National Laboratory

FORM 540 — EnergySolutions, LLC

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

1. EMERGENCY TELEPHONE NUMBER (Include Area Code): (631) 344-2222

ORGANIZATION: Brookhaven National Laboratory

2. IS THIS AN "EXCLUSIVE USE" SHIPMENT? ☐ YES ☑ NO

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST: 3

4. DOES EPA REGULATED WASTE REQUIRING A MANIFEST ACCOMPANY THIS SHIPMENT? ☐ YES ☑ NO
If "Yes," provide Manifest Number ====> EPA MANIFEST NUMBER

5. SHIPPER – NAME AND FACILITY
Brookhaven National Laboratory
for the Department of Energy
Bldg. 860
Upton, NY 11973

SHIPPER I.D. NUMBER: 7314-08-0014
☐ COLLECTOR ☐ PROCESSOR ☑ GENERATOR TYPE (Specify)

Utah Generator Site Access Permit No.: 0112 001 215
SHIPMENT NUMBER: 7314-08-0014

CONTACT: Michael F. Clancy
TELEPHONE NUMBER (Include Area Code): (631) 344-7651

6. CARRIER – Name and Address
Hittman Transportation Services, Inc
1560 Bear Creek Road
Oak Ridge, TN 37830
Truck # - 003
Trailer # - L00005

EPA I.D. NUMBER: TNR000034686
SHIPPING DATE: 11/02/2017

CONTACT: Jeff Packett
TELEPHONE (Include Area Code): (865) 220-5817

SIGNATURE – Authorized carrier acknowledging waste receipt
DATE: 11/2/2017

7. FORM 540 AND 540A — PAGE 1 OF 1 PAGE(S)
FORM 541 AND 541A — 2 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): 7314-08-0014

9. CONSIGNEE - Name and Facility
EnergySolutions, LLC
Clive Disposal Site (Bulk Waste Facility)
Interstate 80, Exit 49
Clive, UT 84029
JB L127863

CONTACT: Security Department
TELEPHONE (Include Area Code): (801)649-2175

SIGNATURE – Authorized consignee acknowledging waste receipt
DATE: 11/6/17

10. CERTIFICATION
This is to certify that the herein-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. This also certifies that the materials are classified, packaged, marked, and labeled and are in proper condition for transportation and disposal as described in accordance with the requirements of 10 CFR Parts 20 and 61, or equivalent state regulations.

AUTHORIZED SIGNATURE: [signature] TITLE: Shipper DATE: 11/2/17

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES			16. TOTAL PACKAGE ACTIVITY MBq	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
DOT Non-Regulated Material Strong Tight Polyfiber Sack	NA	NA	Solid Metal Oxide	Am-241	Cs-137	K-40	4.4385E+00	1.1996E-01	NA	12080 LBS; 189 FT3	R58055-01/01
DOT Non-Regulated Material Strong Tight Polyfiber Sack	NA	NA	Solid Metal Oxide	Am-241	Cs-137	K-40	4.7826E+00	1.2926E-01	NA	13070 LBS; 189 FT3	R58059-01/01
DOT Non-Regulated Material Strong Tight Polyfiber Sack	NA	NA	Solid Metal Oxide	Am-241	Cs-137	K-40	4.6313E+00	1.2517E-01	NA	12620 LBS; 189 FT3	R58065-01/01

FOR CONSIGNEE USE ONLY

___ Record Waste Description Inadequate
___ Contamination or Leakage Detected
___ Unexpected Exposure Rates Detected
___ Labels, Markings, etc. Inadequate
___ Container Integrity Inadequate
___ Other
___ No Violations Detected on this Shipment

20. TERMS AND CONDITIONS

A. HAZARDOUS MATERIALS: Generator represents & warrants that Waste Material __ is (or) ✓ is not a hazardous waste as defined in 40 CFR 261. Where the material is a hazardous waste, this shipment is also accompanied by a separate and completed hazardous waste manifest, along with the appropriate land-disposal restriction notice and/or certification as required by 40 CFR 268.1.

B. TITLE: Upon acceptance at the disposal site by EnergySolutions, LLC, and all appropriate regulatory authorities, title to the Waste Material which conforms to Generator's representations herein shall thereupon transfer from Generator and be vested in EnergySolutions, LLC

C. WASTE MATERIAL: Generator represents and warrants that all data set forth in this (UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST) are true and correct in all respects and in accordance with all applicable governmental laws, rules, regulations and EnergySolutions LLC's facility license.

D. INDEMNIFICATION: Generator agrees to indemnify EnergySolutions, LLC, its officers, employees and agents against all losses and liability whatsoever if such losses or liability results from the failure of the Waste Material to conform in all material respects to the data supplied on the (UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST,) or if this shipment fails to meet the standards prescribed by the Department of Transportation or any governmental agency having jurisdiction over such matters.

FORM 540 (03-06)

Reviewed By (of Brookhaven Science Associates) Date 11/2/17 on behalf of the U.S. Department of Energy at Brookhaven National Laboratory

FORM 540 — EnergySolutions, LLC

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

1. EMERGENCY TELEPHONE NUMBER (Include Area Code): (631) 344-2222

ORGANIZATION: Brookhaven National Laboratory

2. IS THIS AN "EXCLUSIVE USE" SHIPMENT? ☐ YES ☑ NO

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST: 4

4. DOES EPA REGULATED WASTE REQUIRING A MANIFEST ACCOMPANY THIS SHIPMENT? ☐ YES ☑ NO
If "Yes," provide Manifest Number ==>

EPA MANIFEST NUMBER:

5. SHIPPER – NAME AND FACILITY
Brookhaven National Laboratory
for the Department of Energy
Bldg. 660
Upton, NY 11973

SHIPPER I.D. NUMBER: 7314-08-0015
☐ COLLECTOR
☐ PROCESSOR
☑ GENERATOR TYPE (Specify)

Utah Generator Site Access Permit No.: 0112 001 216
SHIPMENT NUMBER: 7314-08-0015

CONTACT: Michael F. Clancy
TELEPHONE NUMBER (Include Area Code): (631) 344-7851

6. CARRIER – Name and Address: Hittman Transportation Services, Inc.
1560 Bear Creek Road
Oak Ridge, TN 37830
Truck # - 3006
Trailer # - 600013

EPA I.D. NUMBER: TNR000034688
SHIPPING DATE: 11/09/2017

CONTACT: Jeff Packett
TELEPHONE (Include Area Code): (865) 220-5817

SIGNATURE – Authorized carrier acknowledging waste receipt
DATE: 11-9-17

7. FORM 540 AND 540A — PAGE 1 OF 1 PAGE(S)
FORM 541 AND 541A — 2 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): 7314-08-0015

9. CONSIGNEE - Name and Facility: JWM
EnergySolutions, LLC
Clive Disposal Site (Bulk Waste Facility)
Interstate 80, Exit 49
Clive, UT 84029
L117943

CONTACT: Security Department
TELEPHONE (Include Area Code): (801)649-2175

SIGNATURE – Authorized consignee acknowledging waste receipt
DATE: 11/14/17

10. CERTIFICATION
This is to certify that the herein-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. This also certifies that the materials are classified, packaged, marked, and labeled and are in proper condition for transportation and disposal as described in accordance with the requirements of 10 CFR Parts 20 and 61, or equivalent state regulations.

AUTHORIZED SIGNATURE
TITLE: Shipper
DATE: 11/9/17

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES			16. TOTAL PACKAGE ACTIVITY MBq	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
DOT Non-Regulated Material — Strong Tight Polyfiber Sack	NA	NA	Solid Metal Oxide	Am-241	Cs-137	K-40	4.6505E+00	1.2569E-01	NA	12725 LBS; 189 FT3	R58051-01/01
DOT Non-Regulated Material — Strong Tight Polyfiber Sack	NA	NA	Solid Metal Oxide	Am-241	Cs-137	K-40	4.8244E+00	1.3039E-01	NA	13195 LBS; 189 FT3	R58052-01/01
DOT Non-Regulated Material — Strong Tight Polyfiber Sack	NA	NA	Solid Metal Oxide	Am-241	Cs-137		3.1050E+00	8.3920E-02	NA	12335 LBS; 189 FT3	R58066-01/01
DOT Non-Regulated Material — Strong Tight Polyfiber Sack	NA	NA	Solid Metal Oxide	Am-241	Cs-137		2.8065E-01	7.5850E-03	NA	1295 LBS; 189 FT3	R58067-01/01

FOR CONSIGNEE USE ONLY

___ Record Waste Description Inadequate
___ Contamination or Leakage Detected
___ Unexpected Exposure Rates Detected
___ Labels, Markings, etc. Inadequate
___ Container Integrity Inadequate
___ Other
✓ No Violations Detected on this Shipment

20. TERMS AND CONDITIONS

A. HAZARDOUS MATERIALS: Generator represents & warrants that Waste Material __ is (or) * is not a hazardous waste as defined in 40 CFR 261. Where the material is a hazardous waste, this shipment is also accompanied by a separate and completed hazardous waste manifest, along with the appropriate land-disposal restriction notice and/or certification as required by 40 CFR 268.1.

B. TITLE: Upon acceptance at the disposal site by EnergySolutions, LLC, and all appropriate regulatory authorities, title to the Waste Material which conforms to Generator's representations herein shall thereupon transfer from Generator and be vested in EnergySolutions, LLC

C. WASTE MATERIAL: Generator represents and warrants that all data set forth in this (UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST) are true and correct in all respects and in accordance with all applicable governmental laws, rules, regulations and EnergySolutions LLC's facility license.

D. INDEMNIFICATION: Generator agrees to indemnify EnergySolutions, LLC, its officers, employees and agents against all losses and liability whatsoever if such losses or liability results from the failure of the Waste Material to conform in all material respects to the data supplied on the (UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST,) or if this shipment fails to meet the standards prescribed by the Department of Transportation or any governmental agency having jurisdiction over such matters.

FORM 540 (03-05)

Reviewed By (of Brookhaven Science Associates) 11/9/17 Date

on behalf of the U.S. Department of Energy at Brookhaven National Laboratory

FORM 540 — EnergySolutions, LLC

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

1. EMERGENCY TELEPHONE NUMBER (Include Area Code): (631) 344-2222

ORGANIZATION: Brookhaven National Laboratory

2. IS THIS AN "EXCLUSIVE USE" SHIPMENT? ☐ YES ☑ NO

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST ==> 3

4. DOES EPA REGULATED WASTE REQUIRING A MANIFEST ACCOMPANY THIS SHIPMENT? ☐ YES ☑ NO
If "Yes," provide Manifest Number ==>

EPA MANIFEST NUMBER:

5. SHIPPER – NAME AND FACILITY
Brookhaven National Laboratory
Brookhaven National Laboratory
Bldg. 860
Upton, NY 11973

SHIPPER I.D. NUMBER: 7314-08-0016
☐ COLLECTOR
☐ PROCESSOR
☑ GENERATOR TYPE (Specify)

Utah Generator Site Access Permit No.: 0112 001 215
SHIPMENT NUMBER: 7314-08-0016

CONTACT: Michael F. Clancy
TELEPHONE NUMBER (Include Area Code): (631) 344-7651

6. CARRIER – Name and Address
RSB Logistics
2425 South 4th Street
Paducah, KY 42003
Truck # - 56913
Trailer # - F48212

EPA I.D. NUMBER: WAR000012005
SHIPPING DATE: 11/15/2017

CONTACT: Ronda Darnell
TELEPHONE (Include Area Code): (270) 444-6604

SIGNATURE – *Authorized carrier acknowledging waste receipt*
DATE: 11/15/17

7. FORM 540 AND 540A — PAGE 1 OF 1 PAGE(S)
FORM 541 AND 541A — 2 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): 7314-08-0016

9. CONSIGNEE - Name and Facility
EnergySolutions, LLC
Clive Disposal Site (Bulk Waste Facility)
Interstate 80, Exit 49
Clive, UT 84029
L128011

CONTACT: Security Department
TELEPHONE (Include Area Code): (801)649-2175

SIGNATURE – *Authorized consignee acknowledging waste receipt*
DATE: 11/20/17

10. CERTIFICATION
This is to certify that the herein-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. This also certifies that the materials are classified, packaged, marked, and labeled and are in proper condition for transportation and disposal as described in accordance with the requirements of 10 CFR Parts 20 and 61, or equivalent state regulations.

AUTHORIZED SIGNATURE
TITLE: Shipper
DATE: 11/15/17

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES			16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
DOT Non-Regulated Material Strong Tight Polyfiber Sack	NA	NA	Solid Metal Oxide	Am-241	Cs-137	K-40	4.6583E+00	1.2590E-01	NA	12750 LBS; 189 FT3	R58046-01/01
DOT Non-Regulated Material Strong Tight Polyfiber Sack	NA	NA	Solid Metal Oxide	Am-241	Cs-137	K-40	4.5939E+00	1.2416E-01	NA	12570 LBS; 189 FT3	R58057-01/01
DOT Non-Regulated Material Strong Tight Polyfiber Sack	NA	NA	Solid Metal Oxide	Am-241	Cs-137	K-40	4.7715E+00	1.2896E-01	NA	13050 LBS; 189 FT3	R58058-01/01

FOR CONSIGNEE USE ONLY

___ Record Waste Description Inadequate
___ Contamination or Leakage Detected
___ Unexpected Exposure Rates Detected
___ Labels, Markings, etc. Inadequate
___ Container Integrity Inadequate
___ Other
___ No Violations Detected on this Shipment

20. TERMS AND CONDITIONS

A. HAZARDOUS MATERIALS: Generator represents & warrants that Waste Material __ is (or) ✓ is not a hazardous waste as defined in 40 CFR 261. Where the material is a hazardous waste, this shipment is also accompanied by a seperate and completed hazardous waste manifest, along with the appropriate land-disposal restriction notice and/or certification as required by 40 CFR 268.1.

B. TITLE: Upon acceptance at the disposal site by EnergySolutions, LLC, and all appropriate regulatory authorities, title to the Waste Material which conforms to Generator's representations herein shall thereupon transfer from Generator and be vested in EnergySolutions, LLC.

C. WASTE MATERIAL: Generator represents and warrants that all data set forth in this (UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST) are true and correct in all respects and in accordance with all applicable governmental laws, rules, regulations and EnergySolutions LLC's facility license.

D. INDEMNIFICATION: Generator agrees to indemnify EnergySolutions, LLC, its officers, employees and agents against all losses and liability whatsoever if such losses or liability results from the failure of the Waste Material to conform in all material respects to the data supplied on the (UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST,) or if this shipment fails to meet the standards prescribed by the Department of Transportation or any governmental agency having jurisdiction over such matters.

FORM 540 (03-06)

Reviewed By (of Brookhaven Science Associates) Date 11/15/17

on behalf of the U.S. Department of Energy at Brookhaven National Laboratory

FORM 540 — EnergySolutions, LLC

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

1. EMERGENCY TELEPHONE NUMBER (Include Area Code): (631) 344-2222

ORGANIZATION: Brookhaven National Laboratory

2. IS THIS AN "EXCLUSIVE USE" SHIPMENT? ☐ YES ☑ NO

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST ==> 3

4. DOES EPA REGULATED WASTE REQUIRING A MANIFEST ACCOMPANY THIS SHIPMENT? ☐ YES ☑ NO
If "Yes," provide Manifest Number ==>

EPA MANIFEST NUMBER

5. SHIPPER – NAME AND FACILITY
Brookhaven National Laboratory
Brookhaven National Laboratory
Bldg. 860
Upton, NY 11973

SHIPPER I.D. NUMBER: 7314-08-0017
☐ COLLECTOR ☐ PROCESSOR ☑ GENERATOR TYPE (Specify)

Utah Generator Site Access Permit No.: 0112 001 215
SHIPMENT NUMBER: 7314-08-0017

CONTACT: Michael F. Clancy
TELEPHONE NUMBER (Include Area Code): (631) 344-7651

6. CARRIER – Name and Address
RSB Logistics
2425 South 4th Street
Paducah, KY 42003
Truck # -50216
Trailer # -F48214

EPA I.D. NUMBER: WAR000012005
SHIPPING DATE: 11/15/2017

CONTACT: Ronda Darnell
TELEPHONE (Include Area Code): (270) 444-6804

SIGNATURE – Authorized carrier acknowledging waste receipt: William T Reed
DATE: 11-15-2017

7. FORM 540 AND 540A — PAGE 1 OF 1 PAGE(S)
FORM 541 AND 541A — 2 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — None PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): 7314-08-0017

9. CONSIGNEE - Name and Facility
EnergySolutions, LLC
Clive Disposal Site (Bulk Waste Facility)
Interstate 80, Exit 49
Clive, UT 84029 L12-8007

CONTACT: Security Department
TELEPHONE (Include Area Code): (801)649-2175

SIGNATURE – Authorized consignee acknowledging waste receipt: Aunt Emma
DATE: 11/20/17

10. CERTIFICATION
This is to certify that the herein-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. This also certifies that the materials are classified, packaged, marked, and labeled and are in proper condition for transportation and disposal as described in accordance with the requirements of 10 CFR Parts 20 and 61, or equivalent state regulations.

AUTHORIZED SIGNATURE: [signature] TITLE: Shipper DATE: 11/15/17

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES			16. TOTAL PACKAGE ACTIVITY MBq	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
DOT Non-Regulated Material Strong Tight Polyfiber Sack	NA	NA	Solid Metal Oxide	Am-241	Cs-137	K-40	2.1867E+00	5.9100E-02	NA	13405 LBS; 189 FT3	R58050-01/01
DOT Non-Regulated Material Strong Tight Polyfiber Sack	NA	NA	Solid Metal Oxide	Am-241	Cs-137	K-40	4.5258E+00	1.2232E-01	NA	12390 LBS; 189 FT3	R58053-01/01
DOT Non-Regulated Material Strong Tight Polyfiber Sack	NA	NA	Solid Metal Oxide	Am-241	Cs-137	K-40	4.5636E+00	1.2334E-01	NA	12495 LBS; 189 FT3	R58056-01/01

FOR CONSIGNEE USE ONLY

___ Record Waste Description Inadequate
___ Contamination or Leakage Detected
___ Unexpected Exposure Rates Detected
___ Labels, Markings, etc. Inadequate
___ Container Integrity Inadequate
___ Other
✓ No Violations Detected on this Shipment

20. TERMS AND CONDITIONS

A. HAZARDOUS MATERIALS: Generator represents & warrants that Waste Material __ is (or) ✓ is not a hazardous waste as defined in 40 CFR 261. Where the material is a hazardous waste, this shipment is also accompanied by a separate and completed hazardous waste manifest, along with the appropriate land-disposal restriction notice and/or certification as required by 40 CFR 268.1.

B. TITLE: Upon acceptance at the disposal site by EnergySolutions, LLC, and all appropriate regulatory authorities, title to the Waste Material which conforms to Generator's representations herein shall thereupon transfer from Generator and be vested in EnergySolutions, LLC

C. WASTE MATERIAL: Generator represents and warrants that all data set forth in this (UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST) are true and correct in all respects and in accordance with all applicable governmental laws, rules, regulations and EnergySolutions LLC's facility license.

D. INDEMNIFICATION: Generator agrees to indemnify EnergySolutions, LLC, its officers, employees and agents against all losses and liability whatsoever if such losses or liability results from the failure of the Waste Material to conform in all material respects to the data supplied on the (UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST.) or if this shipment fails to meet the standards prescribed by the Department of Transportation or any governmental agency having jurisdiction over such matters.

FORM 540 (03-06)

Reviewed By (of Brookhaven Science Associates) 11/15/17 Date

on behalf of the U.S. Department of Energy at Brookhaven National Laboratory