

**Attachment A**  
**AMS Letter Report of**  
**Findings**

May 27, 2022

Ryan Herrell  
Laborers Way, LLC  
700 Second Street  
Encinitas, California 92024  
rherrell@zephyrpartners.com

Re: **Radiological Gamma Walkover Survey  
310 Ship Canal Parkway Development – Subplot 4**

Dear Mr. Herrell:

Laborers Way, LLC has requested that C&S Engineers provide environmental investigation and consulting services related to the 310 Ship Canal Parkway Development (Site or Subplot 4), which is a part of the newly proposed Buffalo Lakeside Commerce Park in Buffalo, New York. The parcel is currently vacant and is approximately 5.1 acres in size. A survey of the property and the current defined BCP boundary can be seen on **Figure 1**.

#### BACKGROUND

Laborers Way, LLC is in the early stages of redeveloping Subplot 4 into a commercial use facility and intends to enter the parcel in the Brownfield Cleanup Program (BCP). Recent correspondence with the New York State Department of Environmental Conservation (NYSDEC) has raised concerns regarding the potential existence of radiological impacted material at the Site due to similar contamination found at nearby developments. The NYSDEC has requested a screening and assessment of radiological impacts on the Site. Laborers Way, LLC does not currently intend to remove any soils from the Site as a part of development nor is disposal of radiologically impacted material planned as a part of their current budget.

Due to the potential financial burdens of the management and possible disposal of radiologically impacted material, Laborers Way, LLC has opted to complete a Radiological Survey of the parcel to preliminarily assess the presence and magnitude of radiologically impacted material at the Site.

#### METHODOLOGY

Advanced Construction Services, Inc. (ACS), a qualified radiological consulting firm, performed an area specific radiological survey across the entire 5.1-acre BCP parcel on May 5 through May 18, 2022. A radiological technician from ACS completed a gamma walkover survey of any accessible areas within the Site Boundary to evaluate these areas for elevated radiation. A Ludlum Model 2221 ratemeter with a 44-10 probe (sodium iodide) was utilized to facilitate identification of areas of elevated radiation, which were then recorded on a map of the site. A known limitation of this approach is that the scan assesses conditions from the surface to depths up to 18 inches, below which any radiation is shielded by the overlying materials.

Following the field survey, Austin Master Services (AMS) was contracted to map and interpret the cumulative scan data collected by ACS in the field. **Attachment A** contains AMS' letter report of findings: *Surface Scan Measurements for 310 Ship Canal Parkway Site*. **Figures 2** and **3** have been pulled from Attachment A and are presented for discussion purposes.

## FINDINGS

A summarization of ACS' and AMS' findings have been described below:

- Surface soils on the property were noted as a mixture of grass bearing soils and material noted as resembling slag.
- Background counts were collected in a grass area approximately 50 yards away from the Site each day. The daily background average was found to be 4425 counts per minute (cpm).
- ACS' instrumentation logged over 28,000 readings and geolocated the readings onto aerial photographs, which are attached as **Figures 2** and **3**. The majority of the radiological readings collected during the gamma walkover survey ranged from approximately 5,000 cpm to over 18,500 cpm.
- AMS derived an Upper Tolerance Level (UTL) of 7,868 cpm. The was UTL used to delineate where contamination at concentrations greater than background were likely to be found. Most of the readings taken on the Site were above the UTL.
- Based upon the readings, AMS concluded that the Site has a relatively consistent and extensive layer of radiological impacted material at the surface. However, further interpreting the data as shown on **Figure 3** indicates that a majority of the Site appears to be at or just above two times the background level, which is the typical threshold used to evaluate the significance of radiological impacts.
- **Figure 3** depicts the areas shown to be greater than three times background in yellow and red. These areas are located in the south western and southeastern corners of the Site.

## RECOMMENDATIONS

Review of the findings presented by AMS in **Attachment A** details the presence of radiologically impacted material across the Site. The presence of radiologically impacted material is not uncommon on sites which are known to contain slag material from former steel operations. Given the site history and noted slag material on the property at depths of up to 10 feet, the readings collected by ACS during their gamma walkover survey are not surprising.

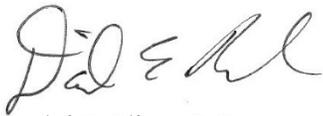
The proposed redevelopment for 310 Ship Canal Parkway is a commercial/warehouse use. Review of the grading plans (also generated by C&S, Engineers) details that redevelopment grading will be balanced onsite and no material is planned to be hauled offsite. Additionally, redevelopment plans indicate that over 95% of the new redevelopment will be capped with competent hardscape or newly poured concrete building foundations. These areas as designed are expected to provide at least 18 inches of shielding through imported subbase, pavement, concrete, etc. Given this information and considering the relatively low levels of surface radiological impacts (below 19,000 cpm), C&S' expects that the future use and required engineering controls (capping) of the BCP will adequately shield workers and visitors on the Site from elevated radiological levels.

It is assumed that proper dust monitoring and suppression techniques will be used during ground intrusive activities on the Site. This should actively mitigate exposure to construction workers and those near the Site at the time of construction from migrating dust.

Because this investigation only included a surficial gamma walkover survey, C&S recommends the onsite monitoring be completed by a qualified radiological technician during all excavation work planned at depths deeper than 18 inches (i.e., foundation and utility line excavation).

Sincerely,

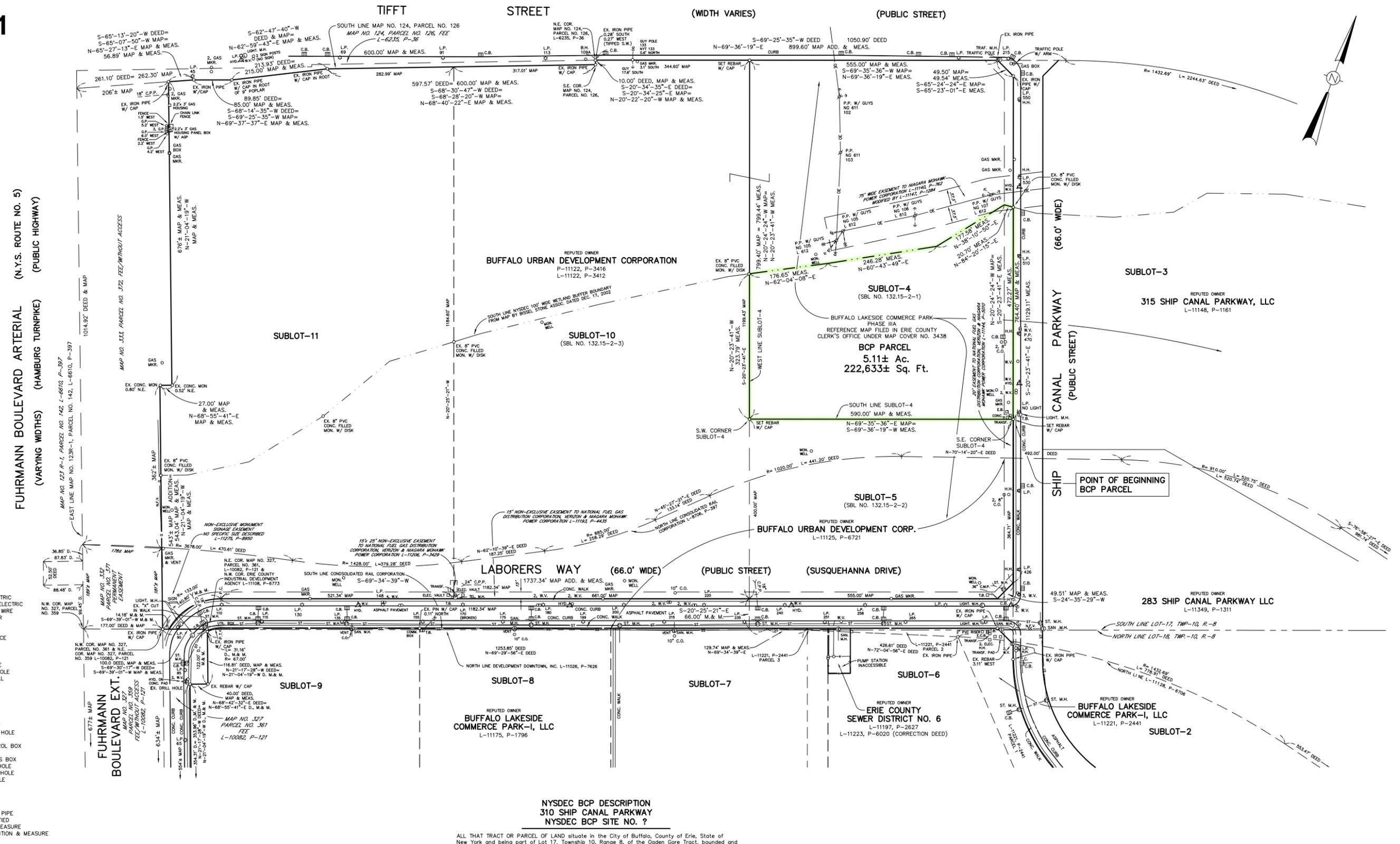
C&S Engineers, INC.



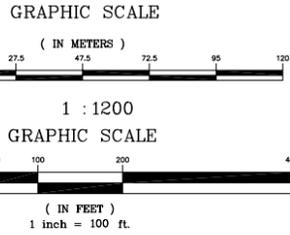
Daniel E. Riker, P.G.

*Department Manager – Environmental Services*

# FIGURE 1



- LEGEND**
- OE OVERHEAD ELECTRIC
  - UE UNDERGROUND ELECTRIC
  - OG OVERHEAD GUY WIRE
  - SS SANITARY SEWER
  - ST STORM SEWER
  - W WATER
  - X CHAIN LINK FENCE
  - P.P. POWER POLE
  - L.P. LIGHT POLE
  - C.B. CATCH BASIN
  - S.M.H. STORM MANHOLE
  - S.M.H. SANITARY MANHOLE
  - M.W. MONITORING WELL
  - C.O. CLEANOUT
  - G.M. GAS MARKER
  - U.B. UTILITY BOX
  - G.P. GUARD POST
  - W.V. WATER VALVE
  - H.D. HYDRANT
  - E.V. ELECTRIC VAULT
  - H.H. ELECTRIC HAND HOLE
  - E.B. ELECTRIC BOX
  - E.C.B. ELECTRIC CONTROL BOX
  - T.B. TELEPHONE BOX
  - C.M.B. COMMUNICATIONS BOX
  - E.H.H. ELECTRIC HANDHOLE
  - T.M.H. TELEPHONE MANHOLE
  - T.M.H. TRAFFIC MANHOLE
  - M.H. MANHOLE
  - S SIGN
  - T TRANSFORMER
  - D.D. DUB DOWN
  - A.G.P. ABOVE GROUND PIPE
  - N.F.V. NOT FIELD VERIFIED
  - D.M.A.M. DEED, MAP & MEASURE
  - D.M.A.M. DEED, MAP ADDITION & MEASURE
  - B.C.P. BOUNDARY



- NOTES**
- BEARINGS SHOWN REFER TO LANDS APPROPRIATED BY THE PEOPLE OF THE STATE OF NEW YORK FOR CITY OF BUFFALO ARTERIAL ROUTE, FUHRMANN BOULEVARD-HAMBURG TURNPIKE MAP NO. 333, PARCEL NO. 372 & MAP NO. 327, PARCEL NO'S 355-362, 366, 374 & 375.
  - SBL: CITY OF BUFFALO TAX MAP NO. 132.15-2-1
  - REFERENCE MAP: ALTA/NPS LAND TITLE SURVEY PREPARED BY McINTOSH & McINTOSH, P.C. DATED APRIL 20, 2012, LAST RESURVEYED RESURVEYED NOVEMBER 4, 2021 AND IDENTIFIED AS JOB NO. 7948-C

**NYSDEC BCP DESCRIPTION**  
**310 SHIP CANAL PARKWAY**  
**NYSDEC BCP SITE NO. ?**

ALL THAT TRACT OR PARCEL OF LAND situate in the City of Buffalo, County of Erie, State of New York and being part of Lot 17, Township 10, Range 8, of the OGDEN GORE TRACT, bounded and described as follows:  
 BEGINNING AT A POINT on the west line of Ship Canal Parkway at the southeast corner of Sublot 4 as shown on a map for Buffalo Lakeside Commerce Park, Phase III A as filed in the Erie County Clerk's Office under Cover Map No. 3438;  
 RUNNING THENCE: S-20°-23'-41"-E, along the west line of Ship Canal Parkway, a distance of 472.27 feet to the POINT OR PLACE OF BEGINNING, containing 5.11 Acres, be the same, more or less, SUBJECT TO easements, rights of way and restrictions of record.  
 BEING AND INTENDED TO BE a portion of lands conveyed to Buffalo Urban Development Corporation by deeds recorded in the Erie County Clerk's Office in Liber 11122 of Deeds at Page 3412 and in Liber 11122 of Deeds at Page 3416.

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ALL RIGHTS RESERVED

NOTE: THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF AN ABSTRACT OF TITLE AND IS SUBJECT TO ANY STATE OF FACTS THAT MAY BE REVEALED BY AN EXAMINATION OF SUCH.

NOTE: UNAUTHORIZED ALTERATION OR ADDITION TO THIS SURVEY IS A VIOLATION OF SECTION 7209, PROVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

RESURVEY	REVISION

SURVEY OF PART OF LOT-17, TWP.-10, R.-8 OF THE OGDEN GORE TRACT	
CITY OF BUFFALO, ERIE COUNTY, NEW YORK	
REFERENCE MAPS FILED IN E.C.C.O. UNDER MAP COVER NO. 3438	
JOB No. 7948-4-EE	SCALE: 1" = 100'
DATE: NOVEMBER 4, 2021	

ALSO BEING SUBLT-4, BUFFALO LAKESIDE COMMERCE PARK, PHASE IIIA &

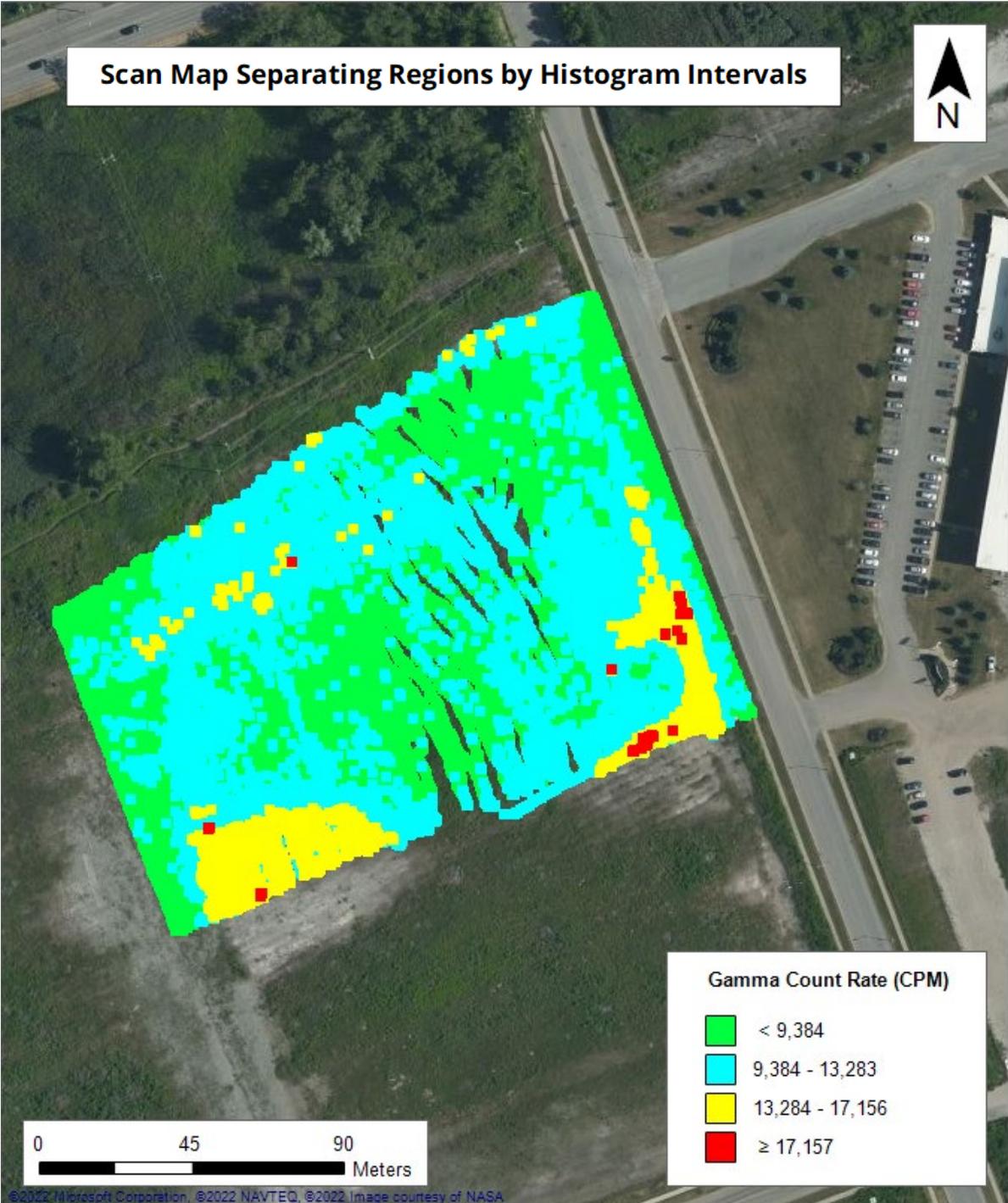
NYS DEC BCP SITE NO. ?  
SITE ADDRESS: 310 SHIP CANAL PARKWAY  
McINTOSH & McINTOSH, P.C.

CONSULTING ENGINEERS, LAND SURVEYORS, PLANNERS  
429 PINE STREET, LOCKPORT, NEW YORK 14094  
PHONE 433-2535 PHONE 625-8360

# FIGURE 2



**FIGURE 3**



# **Austin Master Services Letter Report of Findings**

## **Surface Scan Measurements of 310 Ship Canal Parkway Site**



**Austin Master Services**

801 N 1<sup>st</sup> St  
Martins Ferry, OH  
740-609-3806 Main Number

5/27/2022

Raj Chopra  
ACS, Inc.  
PO Box 986  
Grand Island NY 14072

**Re: Surface Scan Measurements for 310 Canal Parkway Site**

Dear Mr. Chopra:

In May of 2022, ACS was contracted to perform surface radiological scans of one property located at 310 Ship Canal, Buffalo (Lackawanna), NY. The data was forwarded to Austin Master Services, LLC (AMS) Certified Health Physicist for review and assessment. This report provides a summary of the results of that scan assessment.

Prior to scanning the 310 Ship Canal site, background count rate data for the 2"x 2" NaI detector being used for the scans was obtained. This background data is shown in Attachment 2 to this report. [EPA's ProUCL](#), a statistical software program, was used assess the quality of the background data collected. The data was normally distributed and considered to be of sufficient quality to use as background count rate data for comparison with the scan data.

For the gamma "walk over" survey a Ludlum 2221 ratemeter and Ludlum 44-10 sodium iodide detector (the same detector used for the background measurements) were placed in data logging mode and connected to [ERG's proprietary GPS system](#) to allow simultaneous logging of gamma count rates and the easting and northing coordinates.

The "walk-over" process involves scanning the surface at a rate of 0.5 m/s with the detector to ground surface distance of 10 cm. The scan rate is an industry standard in keeping with EPA/NRC guidance in their Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)<sup>1</sup>. During scanning the data logger will log both the location count rate but also the GPS UTM easting and northing coordinates.

The results were then transferred to an aerial photograph of the site and exhibited as colors based on use of background data to develop "bins" of count rate data. The first scan map shown in Attachment 1 was coded by using intervals related to the Upper Tolerance Level (UTL) of the background and the six sigma value above the background mean.

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<sup>1</sup> NUREG-1575, Rev. 1 EPA 402-R-97-016, Rev. 1 DOE/EH-0624, Rev. 1 (August 2000)



**Austin Master Services**

801 N 1<sup>st</sup> St  
Martins Ferry, OH  
740-609-3806 Main Number

In Attachment 1 the first scan map figure shown indicates the site has a fairly extensive cover that contains radioactive materials greater than normal background concentrations. The Upper Tolerance Level (UTL) was used to delineate where contamination at concentrations greater than background were likely to be found. This is in keeping with use of the UTL as a measure when a contaminant is found to occur naturally in the soil and a means is needed to distinguish between natural background radioactivity and that occurring due to human activity.

Because the site was known to contain radiological contaminants from steel slag used as fill, ACS's client also requested a map that would provide a better delineation of the areas significant levels of contamination. Intervals were then established using the Histogram data shown in Attachment 2 and a second map focusing on higher count rate values was created. The second scan map shown Attachment 1 has several sub areas (those in yellow and red) within the scan footprint that are greater than three times the background count rate.

After review of the data, AMS notes the following regarding scan uncertainties, conclusions, and recommendations:

Uncertainties:

1. If contaminants are present at depths greater than 18 inches or under an asphalt surface the scan data may result in a false-negative conclusion relative to whether contamination is present.
2. If the contaminants present, do not decay by emission of a gamma photon then detection of those contaminants is not possible. This is an unlikely scenario in that most of the historical contamination from steel slag in the Lackawanna area is the result of uranium, thorium and their decay progeny being present, and those decay chains all have significant photon emissions.

Please call or email me with any questions or concerns.

Respectfully,

*Peter Collopy*

Peter Collopy, CHP, CIH, CSP  
AMS Radiation Safety Officer



**Austin Master Services**

801 N 1<sup>st</sup> St  
Martins Ferry, OH  
740-609-3806 Main Number

Enclosures:

Attachment 1: Surface Scan Measurements Map and Histogram

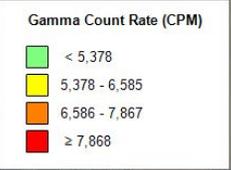
Attachment 2: Background Measurements and Calculations

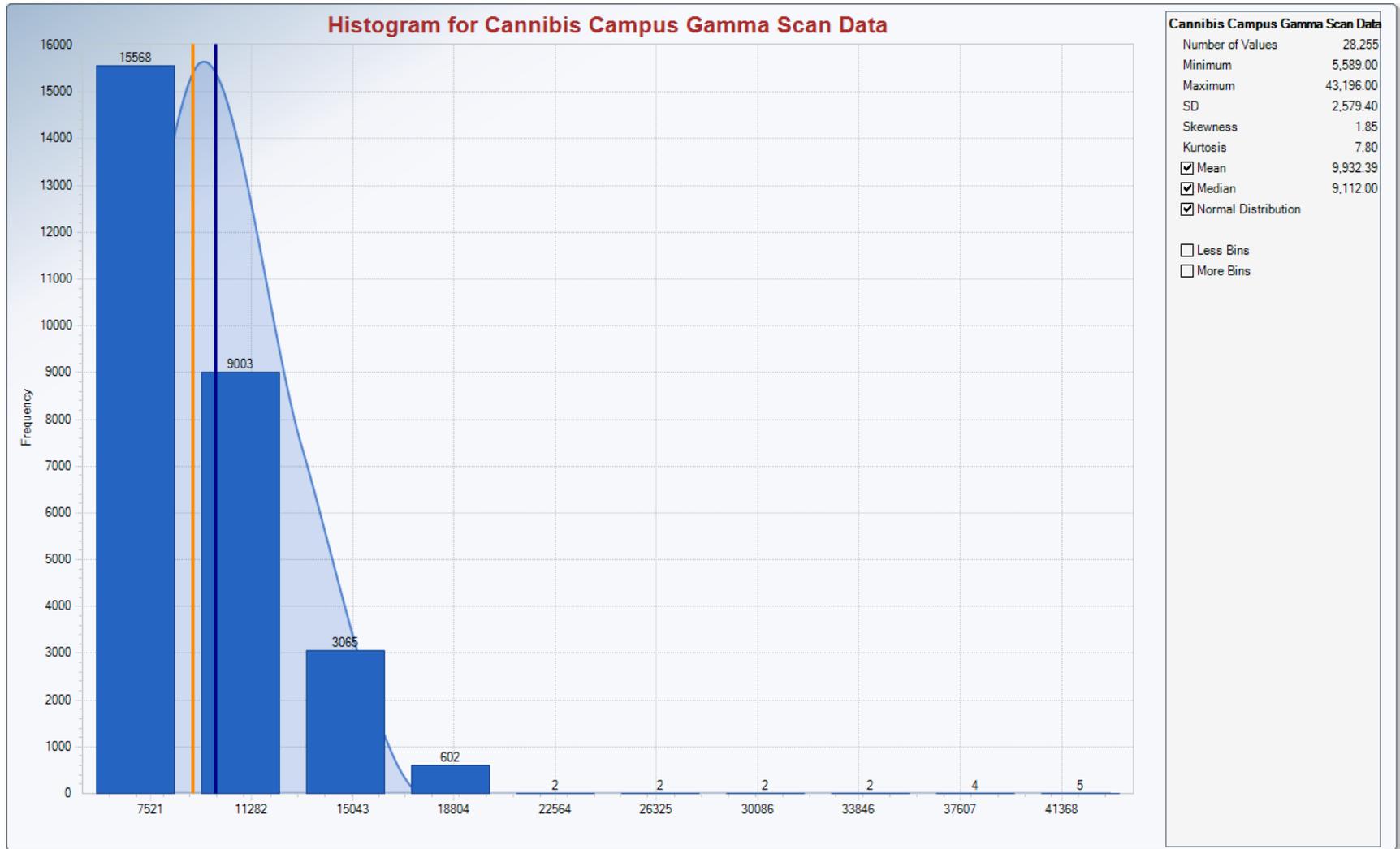
Attachment 3: Instrument Quality Assurance Data

cc: Patrick Horkman, NRRPT

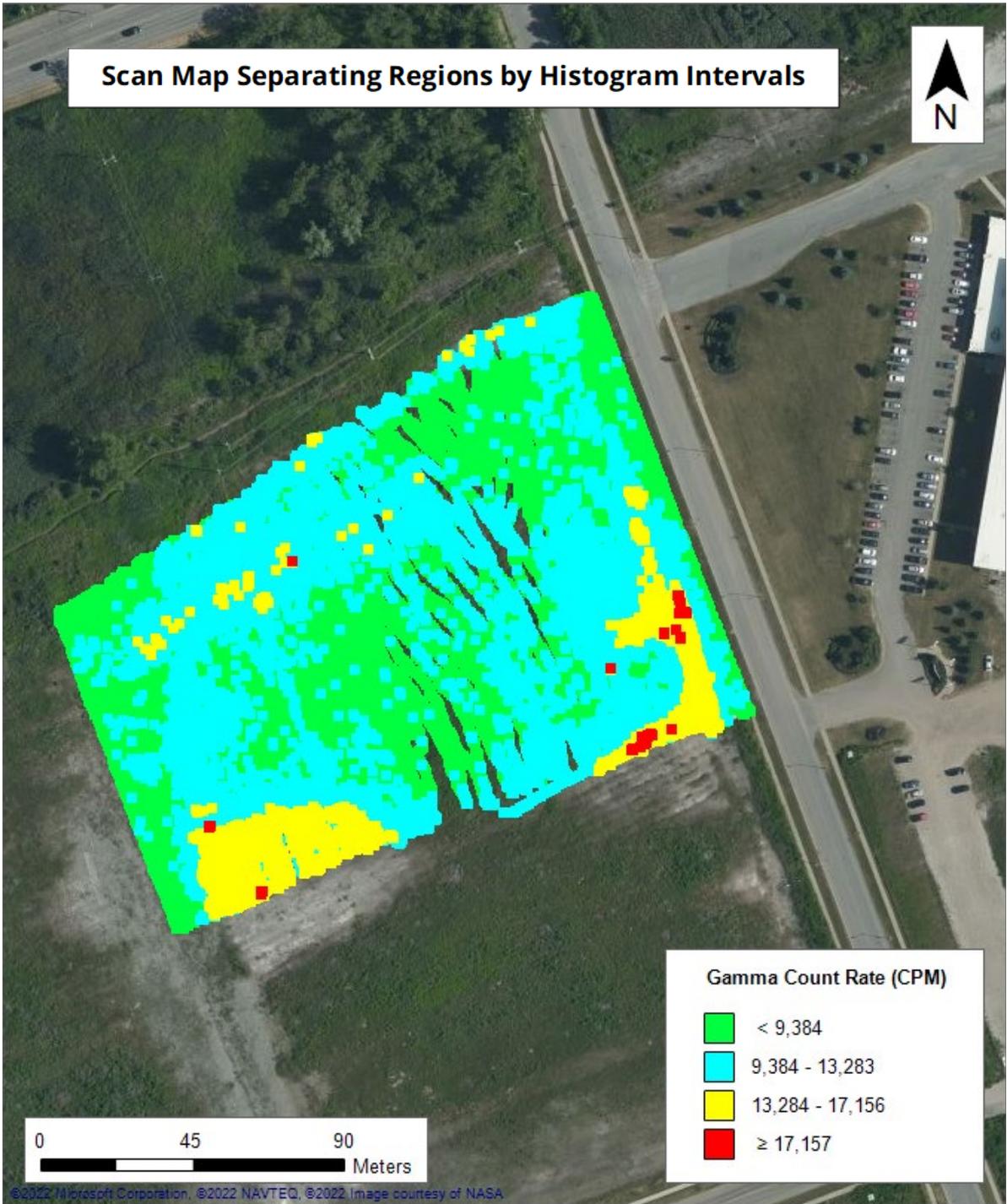
**Attachment 1**  
**310 Canal Parkway Gamma Scan Map and Data Histogram**

**Scan Map Using the Background UTL and Six Sigma plus the Background Mean to Establish Area Intervals**





# Scan Map Separating Regions by Histogram Intervals



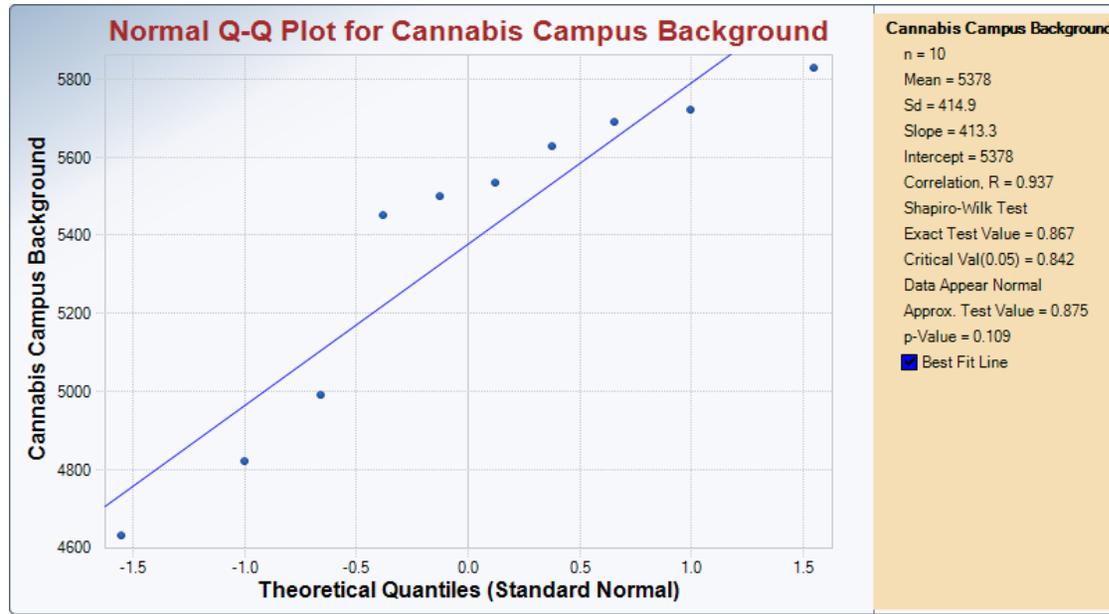
**Attachment 2**  
**Background Data and Calculations**

50% gravel/50%grass

**Background for Cannabis Campus**

1 minut reading (cpm)

#1	5721
#2	5533
#3	4628
#4	5688
#5	5829
#6	5499
#7	4818
#8	5450
#9	5627
#10	4990
Mean ( $\nu$ )	5378
$S_D$ ( $\sigma$ )	415
UTL	6586
$\nu + 6 \sigma$	7868



Cannabis Campus Background			
ProUCL Calculation for Background UTL			
<b>General Statistics</b>			
Total Number of Observations	10	Number of Distinct Observations	10
Minimum	4628	First Quartile	5105
Second Largest	5721	Median	5516
Maximum	5829	Third Quartile	5673
Mean	5378	SD	414.9
Coefficient of Variation	0.0772	Skewness	-0.922
Mean of logged Data	8.587	SD of logged Data	0.0797
<b>Critical Values for Background Threshold Values (BTVs)</b>			
Tolerance Factor K (For UTL)	2.911	d2max (for USL)	2.176
<b>Normal GOF Test</b>			
Shapiro Wilk Test Statistic	0.867	<b>Shapiro Wilk GOF Test</b>	
5% Shapiro Wilk Critical Value	0.842	Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.269	<b>Lilliefors GOF Test</b>	
5% Lilliefors Critical Value	0.262	Data Not Normal at 5% Significance Level	
Data appear Approximate Normal at 5% Significance Level			
<b>Background Statistics Assuming Normal Distribution</b>			
95% UTL with 95% Coverage	6586	90% Percentile (z)	5910
95% UPL (t)	6176	95% Percentile (z)	6061
95% USL	6281	99% Percentile (z)	6344

**Attachment 3**  
**Instrument Quality Assurance Information**







# Certificate of Calibration

## Calibration and Voltage Plateau

Environmental Restoration Group, Inc.  
 8809 Washington St NE, Suite #150  
 Albuquerque, NM 87113  
 (505) 298-4224  
 www.ERGoffice.com

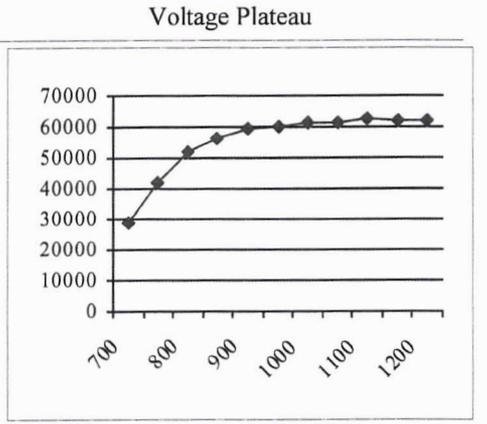
Meter: Manufacturer: Ludlum Model Number: 2221 Serial Number: 271429  
 Detector: Manufacturer: Ludlum Model Number: 44-10 Serial Number: PR373560

Mechanical Check     THR/WIN Operation    HV Check (+/- 2.5%):  500 V     1000 V     1500 V  
 F/S Response Check     Reset Check    Cable Length:  39-inch     60-inch     Other: \_\_\_\_\_  
 Geotropism     Audio Check  
 Meter Zeroed     Battery Check  
 Source Distance:  Contact     6 inches     Other: \_\_\_\_\_    Threshold: 10 mV  
 Source Geometry:  Side     Below     Other: \_\_\_\_\_    Window: \_\_\_\_\_  
 Barometric Pressure: 24.36 inches Hg  
 Temperature: 74 °F  
 Relative Humidity: 20 %  
 Pulser: Ludlum 500-1 sn 201932    Multimeter: n/a    Instrument found within tolerance:  Yes     No

Range/Multiplier	Reference Setting	"As Found Reading"	Meter Reading	Integrated 1-Min. Count	Log Scale Count
x 1000	400	400	400	400650	400
x 1000	100	100	100		100
x 100	400	400	400	40065	400
x 100	100	100	100		100
x 10	400	400	400	4007	400
x 10	100	100	100		100
x 1	400	400	400	400	400
x 1	100	100	100		100

Count Time (min): 1.0

High Voltage	Source Counts	Background Counts	Net Counts
700	28445	2051	26394
750	42113	3995	38118
800	51749	6355	45394
850	56311	8044	48267
900	59179	8807	50372
950	60157	8854	51303
1000	60958	9084	51874
1050	61470	9240	52230
1100	62211	9265	52946
1150	61840	9258	52582
1200	62137	9295	52842



Recommended HV (VDC) 1,100

Additional Comments:

Source 1 Cs-137 sn:4097-03 5.2µCi (1/4/12) button    Total Efficiency: n/a    4π Efficiency: n/a  
 Source 2    Total Efficiency: n/a    4π Efficiency: n/a

NOTE: The total efficiency provided is calculated per ISO-7503/NUREG 1575 (MARSSIM): Total Efficiency = Instrument Efficiency × Source Efficiency; where Instrument Efficiency is calculated as net counts ÷ source 2π emission rate. The 4π efficiency is calculated as net counts ÷ source 4π activity. The provided efficiencies are radionuclide specific and are calculated using source counts and background counts at the recommended operating HV. The provided efficiencies are for general information purposes only and are not intended to replace user efficiency calculation method or results.

Calibrated By: *[Signature]*    Calibration Date: 4/26/22    Calibration Due: 4/26/23  
 Reviewed By: *[Signature]*    Date: 4/28/22