THE MJW COMPANIES

Radiological Consulting Professionals and Expert Technical Services

Gamma Walkover Survey Report

For

3125 HIGHLAND AVENUE
NIAGARA FALLS, NEW YORK 14305
Brownfield Cleanup Program Site #C932169

Prepared for:

INVENTUM ENGINEERING
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By:

MJW CORPORATION
RADIATION CONSULTING PROFESSIONALS

15 Hazelwood Dr., Suite 112
Amherst, NY, 14228

May 26, 2026

MJW Project No. 26.1015.5

1.0 Introduction

Inventum Engineering P.C. (Inventum) is currently performing a Remedial Investigation (RI) of the 3125 Highland Avenue Brownfield Cleanup Program (BCP) Site (C932169) located at 3219 and 3301 Highland Avenue in Niagara Falls, New York (the Site). The RI is being conducted in accordance with the New York State Department of Environmental Conservation (NYSDEC) approved Remedial Investigation Work Plan (RIWP) dated March 2026. The Site is intended for redevelopment and requires various environmental monitoring activities to be performed.

Under the directive of Inventum and in compliance with the NYSDEC-approved RIWP, MJW was instructed to provide a GPS-based overland gamma survey "walkover" of the Site to assess surface and near-surface radiological conditions. MJW performed these activities over two days, on Aril 30 and May 1, 2026. This report documents the results of Phase 1 of the gamma survey which included all accessible areas that are not located inside any of the structures. Phase 2 of the survey will be completed at a later date following removal of all on-site structures.

2.0 Methodology

A GPS-assisted gamma walkover of the Site was performed with a Bluetooth-enabled Ludlum model 3000 paired with a 44-10 (2"x2") NaI gamma detector (Attachment 2). The instrument and a sub-meter GPS unit were paired with a mobile data collection device. The meter, detector, and other electronics were mounted on a cart to ensure consistent and reproducible survey geometry and data.

Data was collected along transects that ran north to south and east to west throughout the Site. The transects were spaced out at varying distances of 3-8 meters. These transects were generated prior to fieldwork using QGIS. Transects were displayed in the data collection device to aid in consistency. Physical barriers on the Site included buildings, fencing, large areas of standing water, debris, and semi-truck trailers. RCTs on the site were informed about a small mound of soil/debris on the north side of the buildings that contained materials with concentrations of lead greater than the characteristically hazardous waste threshold. These obstructions and hazards contributed to any missing data or transects that were collected off-line from the original transect plan. The data collection device recorded a gamma measurement every second, and each measurement was spaced one meter from the previous measurement.

Local area background data was collected at the nearby Hyde Park at 3200 Pine Ave in Niagara Falls, NY. The background scan location is southeast of the Site with similar soils and geology with no known radiological impacts.

3.0 Data Analysis

3.1 Gamma Walkover

The area background and survey data were statistically analyzed with QGIS, software designed to assist in spatial data analysis. MJW compiled Table 1 below, which highlights the statistical summary of data, and Figures 4 and 5 which map the GPS-collected survey data.

Table 1: Gamma Walkover Statistics

Local Area Background Gamma Data	
Number of Data Points	2362
Area Background Mean	7732
1.5x Area Background Mean	11,598
Site Gamma Data	
Number of Data Points	12,136
# > 1.5x ABKG	69
% > 1.5x ABKG	0.6%

For area background data, a total of 2362 data points were evaluated, exhibiting a mean count rate of 7732 +/- 562 CPM. For the survey area data, a total of 12,136 points were evaluated and categorized according to relevant area background data.

The 69 data points exceeding the 1.5x area background mean are found in one primary cluster (52 data points) and two secondary clusters (13 and 4 data points, respectively). The primary cluster exists just north of a deteriorating former coal storage silo (Figure 3) and building along the western edge of the site. Data points in this cluster ranged from 11,600 CPM to 29,500 CPM (~1.5x ABKG to ~3.8x ABKG). Fourteen of the data points were greater than 3x ABKG, potentially indicating a subset of elevated material within the larger cluster. This cluster is visualized separately (Figure 5).

The two secondary clusters had a maximum value of 12,800 CPM (~1.65x ABKG) and are much smaller in size and number of data points than the primary cluster. One cluster is located along the western edge of the site, just north of a roadway. The other cluster is located at the north end of the smaller courtyard-type area in the buildings on the southern half of the site.

4.0 Results

4.1 Gamma Walkover Results

The data collected from the Site walkover are color-coded in Figure 4 to indicate measurements as:

Green	< 1.5x ABKG
Red	> 1.5x ABKG

The segregation criteria used for the various measurements align with the DMM-5 policy for screening surveys to verify the presence of potential radiological contamination.

Data from the primary cluster is color-coded in Figure 5 to indicate measurements as:

Yellow	> 1.5x ABKG
Orange	> 2.0x ABKG
Red	>3.0x ABKG

4.2 Sampling Procedure

Samples of potentially elevated material will be collected from the identified clusters of elevated gamma counts. Coordinates for each cluster can be found in Table 2 below. Field technicians will determine the final sampling location based on accessibility and in-field screening.

Table 2

Cluster	Latitude	Longitude
Primary	43.11753686	-79.04602967
Secondary (Western Edge)	43.11787801	-79.04615287
Secondary (Courtyard)	43.11734009	-79.04548756

In locations where survey readings exceed 1.5 x background, a minimum of three representative composite samples of the TENORM will be collected, including from the area of highest survey readings, to be analyzed by a DOH Environmental Laboratory Approval Program (ELAP) certified laboratory. A field duplicate will be generated for the Primary Cluster. One (1) minute scaler counts will be taken at each selected location and also on the sample jar using a Ludlum 2241-2 with a Ludlum 44-10 “2x2” NaI detector or equivalent. All sampling shall be performed in accordance with MJWRCP-66 Soil Sampling Protocols Rev. 0 dated December 4, 2020 (Attachment 4).

Background samples will be collected from the nearby Hyde Park at 3200 Pine Ave in Niagara Falls, NY for comparison purposes.

Collected samples will be placed in appropriate containers and shipped to GEL Labs located in Charleston, SC laboratory for radiological analysis. Samples will be analyzed by EPA 901.1m Gamma Spectrometry with a 21-day ingrowth for Ra-226. Submittal of this report to the NYSDEC constitutes the pre-emptive notice of sampling communication as required by the Screening Survey Plan (MJW Doc. # 25.1007.6 – Attachment 3).

5.0 Conclusions

MJW's conclusions from the investigation are as follows:

- The gamma walkover scans indicated the presence of elevated material on-site and potential TENORM material.
- Additional screening and sampling is required to accurately characterize the material according to DMM-5. MJW will schedule with Inventum for sampling at their convenience after NYSDEC approval of Gamma Walkover Survey Report. MJW will provide report of sampling to follow.
- Additional screening will be performed following the removal of on-site structures, previously identified elevated areas will be re-evaluated.

MJW will be available for any assistance with TENORM Management, field screening, reuse, and disposal of onsite material for future work at the site surveyed. This job concluded without incident.

6.0 List of Attachments

Attachment 1. Figures and Images
Attachment 2. Instrument Calibration Sheets
Attachment 3. Screening Survey Plan for 3125 Highland Ave
Attachment 4. MJWRCP-66 Soil Sampling Procedures

Attachment 1. Figures and Images

Figure 1. Primary Ground Condition of Site

Figure 2. Fall Debris (tiles) from Former Coal Storage Silo

Figure 3. Former Coal Storage Silo

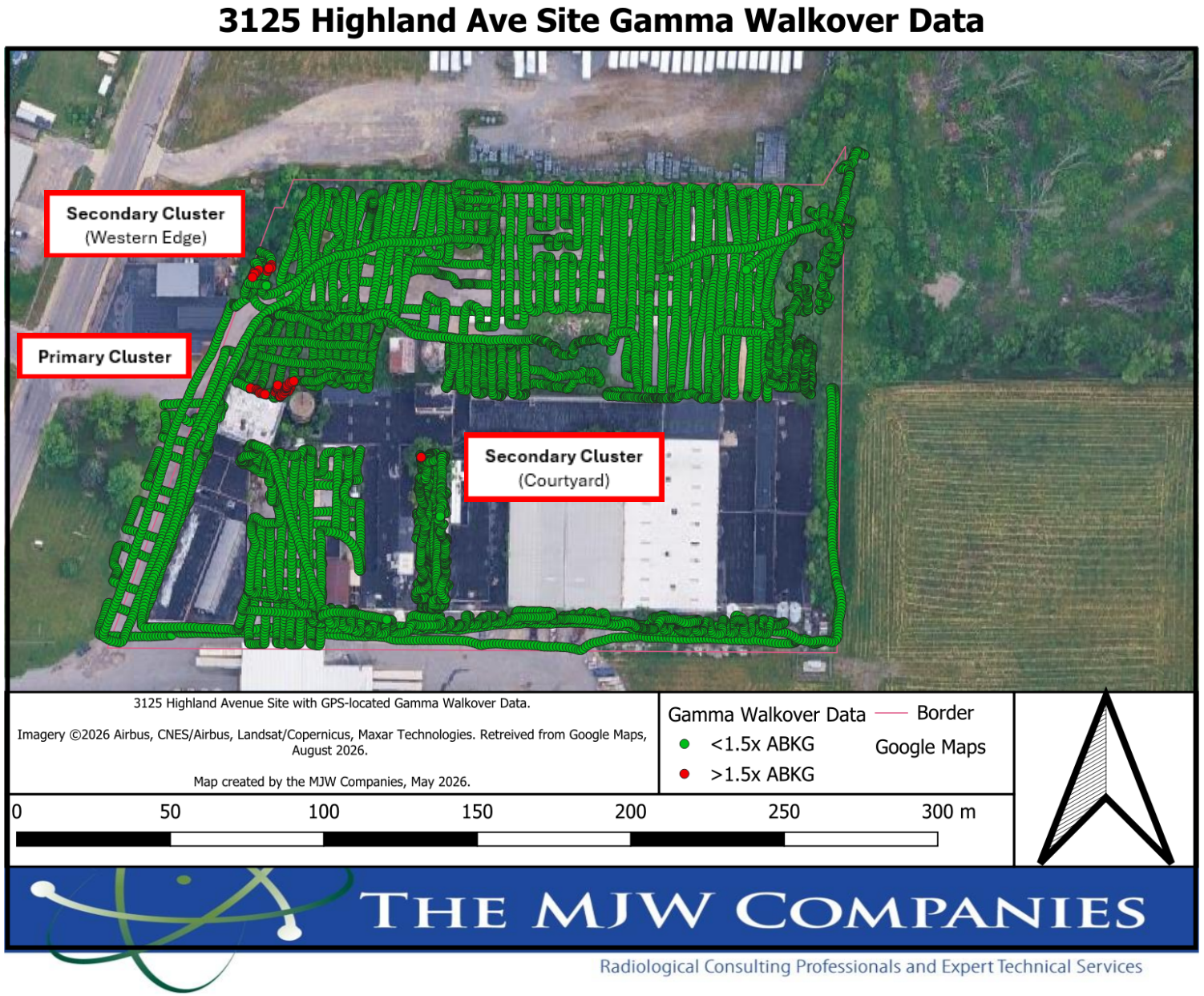

Figure 4. Site Gamma Walkover Map

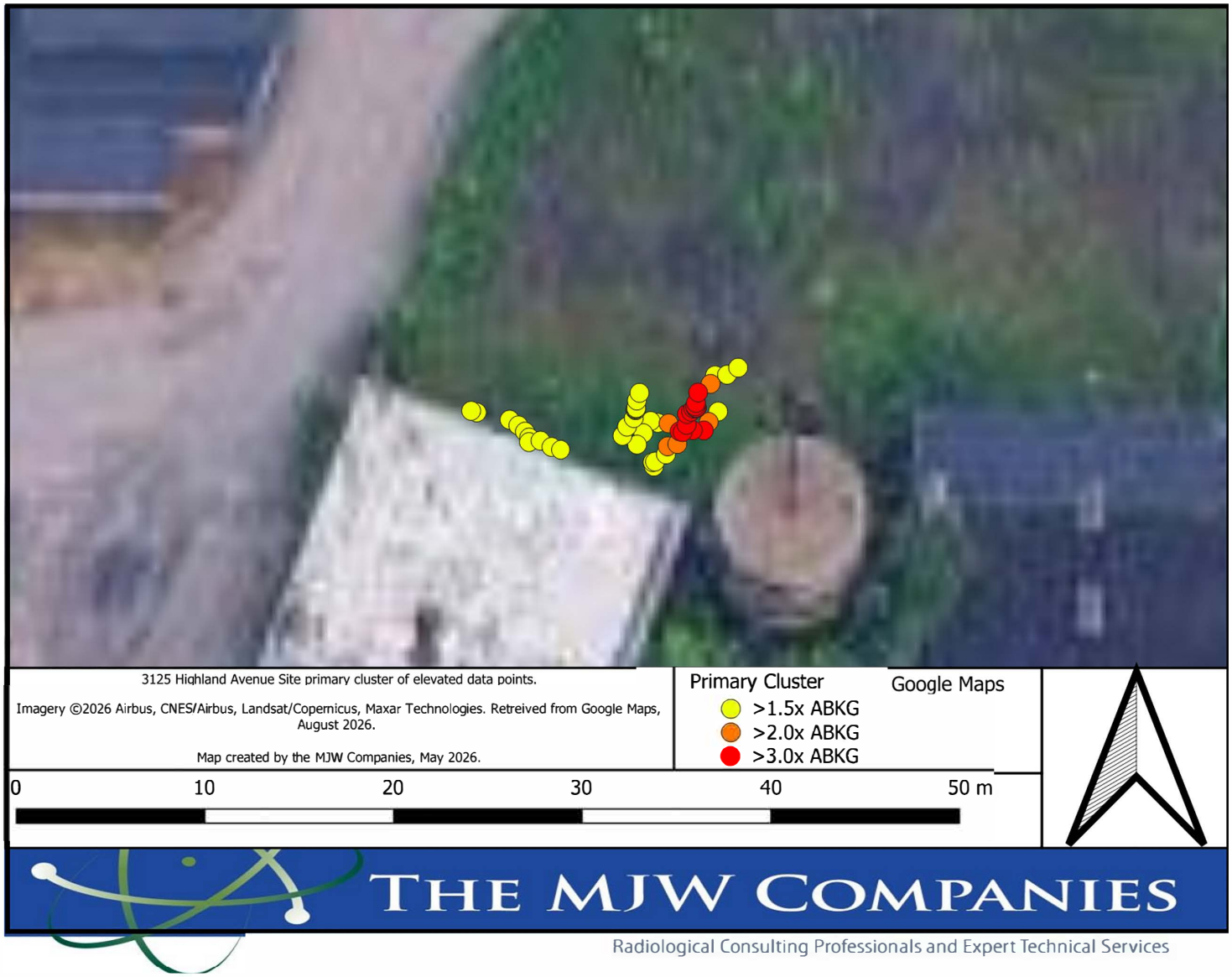

Figure 5. Primary Cluster Map

Attachment 2. Instrument Calibration Sheets

Environmental Restoration Group, Inc
8809 Washington NE, Suite #150
Albuquerque, NM 87113

office: (505) 298-4224
fax: (505) 797-1404
web: www.ERGOffice.com

EQUIPMENT PACKING SLIP

Company Name: MJW Corporation
Contact Name:
Contact Telephone: 716-631-8291

Order Number: 6421
P.O. or Reference Number: 20260427

Date Ordered: 4/23/2026
Date Shipped: 4/26/2026
Date of Delivery: 4/27/2026

Shipping Method: n/a
Shipping Number: 1373-0585-2

Ship To Information:

MJW Corporation
15 Hazelwood Dr
Suite 112
Amherst, NY 14228
716-790-0119

Billing Address:

MJW Corporation
accountspayable@mjwcorp.com
15 Hazelwood Dr
Ste 112
Amherst, NY 14228

Equipment Enclosed:

Instrument	*Serial Number*	*Tested*
Ludlum 3000	25035863	☐
Ludlum 44-10	PR501114	☐
Juniper Geode GNS3	396488	☐
Juniper Mesa4	371123	☐

Special Instructions:

None

Note:
(a) By accepting and using ERG rental equipment, the Renter indemnifies and holds harmless ERG against any and all claims, actions, proceedings, costs, expenses, damages, and liabilities (including attorney's fees and costs) arising out of Renter's use of equipment.

Designer and Manufacturer of Scientific and Industrial Instruments

www.ludlums.com

CERTIFICATE OF CALIBRATION

LUDLUM MEASUREMENTS, INC.
501 Oak Street
325-235-5494
Sweetwater, TX 79556, U.S.A.

ilac-MRA ACCREDITED CERT # 4084.01

Customer ENVIRONMENTAL RESTORATION GROUP ORDER NO. 20531534/580115

Mfg. Ludlum Measurements, Inc. Model 3000 Serial No. 250358163

Mfg. Ludlum Measurements, Inc. Model 44-10 Serial No. PR501114

Cal. Date 28-Oct-25 Cal Due Date 28-Oct-26 Cal. Interval 1 Year Meterface 44-10

Check mark ☑ applies to applicable instr. and/or detector IAW mfg. spec. T. 74 °F RH 41 % Alt 703.7 mm Hg

☐ New Instrument Instrument Received ☑ Within Toler. +-10% ☐ 10-20% ☐ Out of Tol. ☐ Requiring Repair ☐ Other-See comments

☑ Mechanical ck. ☐ Meter Zeroed ☐ Background Subtract ☐ Input Sens. Linearity
☑ F/S Resp. ck ☐ Reset ck. ☐ Window Operation ☐ Geotropism
☑ Audio ck. ☑ Alarm Setting ck. ☑ Batt. ck. (Min. Volt) 4.4 VDC
☑ Calibrated in accordance with LMI SOP 14.8 ☑ Calibrated in accordance with LMI SOP 14.9

Instrument Volt Set 900 V Input Sens. 10 mV Det. Oper. 900 V at 10 mV Threshold Dial Ratio = mV

☑ HV Readout (2 points) Ref./Inst. 500 / 501 V Ref./Inst. 1500 / 1525 V

COMMENTS:

```
Deadtime 1:  8.9 µSec                Firmware:  5LC-N42.4904
Deadtime 2:  Disabled                Primary Unit:  cpm
Calibration Const:  5.19 e+10        Secondary Unit:  R/hr
Primary Units Alarm:  5 kcpm
Secondary Units Alarm:  5 mR/hr
Overload protection confirmed up to 500µR/hr
Pulser Calibration "Ratemeter Readout" performed without Deadtime.
Pulser Calibration "Scaler Readout" reflects 6 second count.
```

Gamma Calibration: GM detectors positioned perpendicular to source except for M 44-9 in which the front of probe faces source.

RANGE MULTIPLIER	REFERENCE CAL. POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING	RANGE MULTIPLIER	REFERENCE CAL. POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING
Digital	5 mR/hr	4.59 mR/hr	5.01 mR/hr				
Digital	1 mR/hr	1.06 ?	1.02 ?				
	800 µR/hr	817 mR/hr	810 mR/hr				
	200 µR/hr	200 ?	192 ?				

Range(s) Calibrated Electronically

Multimeter uncertainty within 1.4% of reading, Gamma uncertainty within 5.6% of reading, Neutron uncertainty within 7.0% of reading, Count rate uncertainty within 5.2% of reading

	REFERENCE CAL. POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING		REFERENCE CAL. POINT	INSTRUMENT RECEIVED	INSTRUMENT METER READING
Digital Readout	800K cpm	800 kcpm	800 kcpm	Scaler	800K cpm	80.0 kcpm	80.0 kcpm
	200K cpm	200	200		200K cpm	20.0	20.0
	80K cpm	80.0	80.0		80K cpm	8.00	8.00
	20K cpm	20.0	20.0		20K cpm	2.00	2.00
	8K cpm	8.00	8.00		8K cpm	800 cpm	800 cpm
	2K cpm	2.00	2.00		2K cpm	200	200
	800 cpm	800 cpm	800 cpm		800 cpm	80	80
	200 cpm	200 ?	200 ?		200 cpm	20	20

Ludlum Measurements, Inc. certifies that the above instrument has been calibrated by standards traceable to the National Institute of Standards and Technology, or to the calibration facilities of other International Standards Organization members, or have been derived from accepted values of natural physical constants or have been derived by the ratio type of calibration techniques.
All pass/fail determinations are based on the manufacturer's specifications without considering uncertainty factors.
Measurement results represent expanded uncertainties expressed at approximately the 95% level of confidence, using a coverage factor of k=2.
The calibration system conforms to the requirements of ANSI/NCSL Z540-1-1994 and ANSI N323AB-2013

ISO/IEC 17025:2017(E)
State of Texas Calibration License No. LO-1963

Reference Instruments and/or Sources: Cs-137 S/N: ☐ 059 ☐ 2171CP ☐ 2261CP ☐ 720 ☐ 734 ☐ 781 ☐ 1131 ☐ 1616 ☐ 1696 ☐ 1909 ☐ 1916CP ☐ 2324/2521
☐ 5717CO ☐ 5719CO ☐ 60646 ☐ 70897 ☐ 73410 ☐ E552 ☑ G112 ☑ 2168CP ☐ S-394 ☐ S-1054 ☐ T10081 ☐ T10082 Neutron Am-241 Be ☐ T-304 Ra-226 ☐ Y982
☐ E551 ☐ 5105 ☐ CSV280

☐ Alpha S/N ☐ Beta S/N ☐ Other

☑ m 500 S/N 247891 ☐ Oscilloscope S/N ☑ Multimeter S/N 15210051

Calibrator Teresa Herrera Teresa Herrera Title Calibrator Date 28-Oct-25

QC'd By Title Final QC Date 29 Oct 25

AC Inst. Only ☐ Passed Dielectric (Hi-Pot) and Continuity Test ☐ Failed:

Order #: 20531534/580115

Customer: ENVIRONMENTAL RESTORATION GROUP

Detector: 44-10 **Serial No.:** PR501114

Instrument: Model 3000 **Serial No.:** 25035863

BKG Time: 6

Distance: Surface

Selected HV: 900

Date: 28-Oct-25

Notes: Performed with 5ft cable

Signature: Teresa Herrera

Channel(s)

Name	Threshold
Channel 1	10 mV

Source(s)

Name	ID	Activity	Time	Type
Am-241	E97	0.84 µCi	6	γ

High Voltage	Background	Am-241: E97
	Reading	Reading
700	270	14,654
750	275	15,242
800	288	15,473
850	275	15,473
−900	333	15,423
950	302	15,477
1000	322	15,432
1050	424	15,762
1100	865	16,796

 Ludlum Device Parameters Model: Model 3000 Serial Number: 25035863 Date: 10/27/2025 3:34:34 PM

Dev

SN	25035863
Mdl	Model 3000
Aud Lvl	Single
Sleep	0
Setup Prtct	Normal
Rate Reset Btn	Off
Temp	52
LB	0
Conv R To Sv	0.0106
Fw	5LC-N42.4904
V Bat	6.262

RTC

Day	27
Mo	10
Hr	3
Mins	32
Sec	41
Yr	2025

Ext 1

Meas

Cur	22.9729

Cnt

Audio Mode	Off
Display Mode	Timer

Btn

Handle

Cnt Map 1	Take Log
Cnt Map 2	Do Nothing
Cnt Map 3	Do Nothing
Rate Map 1	Take Log
Rate Map 2	Do Nothing
Rate Map 3	Do Nothing

BklThr

Sensitivity	Low

High

Light Turn Off	0
Light Turn On	0

Low

Light Turn Off	0
Light Turn On	0

AuxCom

Crypto En	Off
Enable	On
Mode	LMI Direct
Write Prtct	Off

AutoMode

Interval	1

Pwr

Auto Off Tm	0
Mode	On At Boot

DetMem 1

Mdl	44-10
SN	PR501114
Aud Sigma	Off
Count Tm	60
HV	900
Op Mode	Rate/Max/Count
Over Cur	100

Ch 1

CPS Offset	0
DTC 1	8.9E-06
DTC 2	0
Eff	15
LO Cnt Tm	60
R Cal Const	5.19E+10
Thr	0.01

Response

Rate	Fast
Time	4

Unit 1

Count

Alrm 1	0
Alrm 2	0
Min Exp	000E0
Unit	counts

Rate

Alrm 1	0
Alrm 2	5
Max Val	999000
Min Exp	000E-2
Unit	cpm

Unit 2

Count

Alrm 1	0
Alrm 2	0
Min Exp	000E-6
Unit	R

Rate

Alrm 1	0
Alrm 2	0.005
Max Val	0.007
Min Exp	000E-8
Unit	R/h

DevCal

Ext 1

Ch 1

Thr

Offset	10

HV

Offset	-52
Slope	47

LOG

MODE	1
NOTES	
USER	
ENABLE	0

AUTO

TM	60

NUM

MAX	1000
REC	0

Attachment 3. Screening Survey Plan for 3125 Highland Ave

THE MJW COMPANIES

Radiological Consulting Professionals and Expert Technical Services

Screening Survey Plan

For

3125 Highland Avenue

Niagara Falls, NY 14305

Prepared for:

INVENTUM ENGINEERING
441 CARLISLE DRIVE
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By:

MJW CORPORATION
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15 Hazelwood Dr., Suite 112

Amherst, NY 14228

February 17, 2026

MJW Project No. 25.1007.6

1.0 DMM-5 Screening Survey Plan

This Document serves as the Screening Survey Plan for Task 1 of the MJW Proposal #25.1007.5 for radiological field and project planning services in support of the Remedial Investigation of the 3125 Highland Avenue Brownfield Cleanup Program (Site) site located at 3219 and 3301Highland Ave, Niagara Falls, NY. The remedial investigation is being conducted in accordance with the BCP agreement with the New York State Department of Environmental Conservation (DEC) dated April 24, 2025. The BCP Site is listed as Site Number C932169. This screening plan will be conducted in accordance with the NYSDEC guidance document "DMM-5 / Management of Soils Contaminated with Technically Enhanced Naturally Occurring Radioactive Materials (TENORM)."

2.0 Site Introduction

Inventum Engineering, P.C. (Inventum) is performing a remedial investigation of the approximately 8.04-acre BCP Site located at 3219 and 3301 Highland Ave, in Niagara Falls, New York (the Site). The Site is currently owned by Ganson Alternative Energy, LLC (GAE). The Site was developed as early as 1914 and used for manufacturing by the U.S. Light & Heating Company, which manufactured axle lighting devices, storage batteries, and electric self-starters for automobiles. Electric Autolite operated on the Site until it merged with Prestolite Company as a Division of Eltra Corporation. Several name changes occurred through time, including AutoLite Battery Corporation, The Electric Auto-Lite Company, Prestolite Division of Eltra Corporation, Allied Chemical Corporation (later Allied Corporation), Niagara Molded Products, and Tulip Corporation. Tulip produced molded plastics products for the automotive industry and injection molded recycling containers and other specialized plastic containers for other industrial customers. Tulip owned the Site from 1985 until purchased by GAE in October 2017. Tulip continued to operate on the Site under a lease agreement with GAE until December 2021 and thereafter continued to use some of the buildings for product warehousing/storage until June 2023. All buildings at the Site are currently vacant and unused.

GAE's intent is to maintain the commercial/industrial use of the Site and construct additional office space, warehouses and limited manufacturing surrounded by additional

paved parking, access roads, and logistics areas. This includes demolition of all the site structures and concrete slabs.

The Site is in a commercial, industrial, and residential area and bounded to the south by the former Power City Warehouse (a.k.a Tract I Highland Avenue BCP Site; BCP Site No. C932157); to the east by a narrow strip of land owned by National Grid[1] and beyond by the Tract II Highland Avenue Site (Inactive Hazardous Waste Site [IHWS] No. 932136); to the west by five (5) GAE owned parcels, two industrial parcels owned by James N. Gant, and Highland Avenue.

2.1 Local Site Background Area

The Hyde Park golf course will be used as a local area background location (Figure 1). The Site area is located approximately 1.5 miles from the Hyde Park background location. The background location's status as a known clean site and its proximity to the survey area were considerations in its selection. This area also appears to have undergone minimal development when comparing current aerial photos to those dating back to 1938.

Previous radiological investigations have been conducted on the Tract 1 Highland Avenue BCP Site and Tract 2 Highland Avenue IHWS site, adjacent to the 3125 Highland Ave BCP Site. More information concerning the results of these investigations, including the full report can be found at the DEC library for the site(s) (Index of /data/DecDocs/C932157 and Index of /data/DecDocs/932136).

3.0 Gamma Walkover Survey(s)

As described, MJW will perform gamma walkover survey(s)** beginning just north of Beech Avenue, within the Inventum provided project boundaries.

**These surveys will be completed in two (2) separate phases:

1. Phase 1 : All areas on the property that are to be surveyed and accessible that are NOT located inside of any structure will be completed first.
2. Phase 2 (To be completed upon structure removal): Upon completion of Phase 1, if necessary, all areas previously inaccessible due to site conditions or work activities will be surveyed. Site development calls for the removal of on-site structures; prior

[1] This is a utility right of way and is also known as the 15th Street ROW in the Tract II Highland Avenue Site (Inactive Hazardous Waste Site No. 932136) documentation.

to subsurface activities but after structures are removed, the newly accessible areas will be subject to a gamma walkover survey. If the newly accessible areas are a different surface type than previously evaluated, a new representative background will be selected. The new location will be communicated to the assigned NYSDEC ERS (Environmental Radiation Specialist) prior to any surveys.

3.1 Survey Procedure

Predesigned transects will be generated using QGIS at three (3) meter intervals perpendicular to Beech Ave and eight (8) meter intervals parallel to Beech Ave (Figure 2). MJW technicians will advance the surveys in a crosshatch pattern. No radiological characteristics of the work area have been previously documented. Transects are designed to provide maximum coverage representative of the preliminary work plans provided by Inventum. In the event of count rates being detected above the 1.5x area background, MJW technicians will attempt to delineate the area of elevated count rates using a smaller crosshatch one (1) meter spaced grid.

To ensure a consistent site survey, MJW technicians will use a Bluetooth enabled Ludlum 3000 (or equivalent) with a Ludlum 44-10 "2x2" NaI detector. The instrument and sub-meter GPS unit will be paired to a mobile data collection device to enable in-field viewing and confirmation of results.

All GPS-enhanced overland gamma property surveys shall be performed in accordance with MJW Radiological Control Procedure No. 40., Performing a GPS Enhanced Radiation Survey and Data Assessment, Rev. 4, dated October 29, 2021. MJWRCP 40 is attached to this work plan as Attachment 2.

Modifications to this plan for Phase 2 may be made as a result of data collected during Phase 1. All modifications will be communicated to the NYSDEC prior to work activities.

4.0 Soil Sample Collection and Analysis

Following the completion of gamma walkover surveys, data will be evaluated by the MJW RSO and radiological control technicians to identify data points and/or areas exceeding the DMM-5 (Attachment 1) Screening Survey criteria of 1.5x ABKG. If no data points/areas are identified, no sampling will take place. If datapoints/areas exceeding the 1.5x ABKG limit are identified, a minimum of three (3) representative composite samples will be collected. Sample locations will be pre-determined and communicated to the assigned NYSDEC ERS before collection.

4.1 Sampling Procedure

Suspect TENORM material will be gathered from a one-meter square surrounding each selected location and comingled into a five (5) gallon bucket to generate a minimum 500-gram composite sample. One (1) minute scaler counts will be taken at each selected location and on the sample jar utilizing a Ludlum 2241-2 with a Ludlum 44-10 "2x2" NaI detector or equivalent. All sampling shall be performed in accordance with MJWRCP-66 Soil Sampling Protocols Rev. 0 dated December 4, 2020 (Attachment 3).

Collected samples will be placed in appropriate containers and shipped to an accredited laboratory for radiological analysis. Samples will be analyzed by EPA 901.1m Gamma Spectroscopy with a 21-day ingrowth for Ra-226.

MJW routinely uses GEL Labs located in Charleston, SC and that is the laboratory proposed for the sampling of this work plan. For more information about GEL's radiochemistry services see the following link: https://www.gel.com/laboratories/services/radiochemistry-analysis. GEL's chain of custody (COC) form is shown in Attachment 4.

5.0 Reporting

Results from the screening survey and sample collection will be communicated to the NYSDEC's ERS. The report will include any corrective actions or deviations from this Screening Plan, instrument documentation (calibration records and operational checks), field notes, and a summary analysis of the results.

6.0 Radiological Controls and Safety

MJW technicians will follow ALARA (As Low as Reasonably Achievable) principles. The ALARA protocol serves to eliminate radiation exposures that have no direct benefit. MJW Technicians will have radiologic specific training and will receive a safety briefing by the MJW RSO prior to site mobilization. Technicians will follow the OSHA Stop Work Authority protocol. Radiological monitoring coverage will be provided to ensure radiological safety during work activities. Daily field notes describing work performed, notable events, and radiological findings will be provided to the MJW RSO that day for review.

MJW Field technicians will conduct area dose rate monitoring at all times. A Bicron MicroRem or equivalent meter will be monitored by one (1) technician at all times. If significantly elevated instrument readings or off-normal events (i.e., instrument count rates > 1.5 times area background or personnel contamination), field technicians will halt work, document the location, and contact the MJW RSO prior to resuming field activities.

MJW Technicians will wear a PPE minimum of:

- Hard-toe work boots
- Work gloves
- Safety (high visibility) vest or similar
- Safety Glasses or shield.

Section 6.1 Hygiene and Contamination Monitoring

The following precautions shall be observed to promote workplace safety and in accordance with ALARA principles:

- No eating, drinking, smoking, or chewing within any active work area,
- Hand washing is required upon exit from any active work area,
- Hand and foot radiological survey meter "frisk" when exiting areas where elevated radioactivity has been detected. Personnel frisks will be performed using the Ludlum 44-9, GM probe and/or the Ludlum 44-89, Alpha/beta probe or equivalent instrument combinations.

In addition to the above, following the completion of any gamma walkover survey, MJW technicians will conduct a personnel frisk prior to exiting the work area or site. MJW technicians will use 10 NYCRR Part 16 Appendix A Table 7 (Attachment 5), specifically the limits for a "Clean area." Large Area Wipes (LAWs) will be utilized for the assessment of removable personnel contamination and analyzed with the Ludlum 44-9, GM probe and the Ludlum 44-89, Alpha/beta probe or equivalent instrument combinations.

Disposable gloves will be used for any direct handling of potentially elevated material and disposed of following smear analysis for removable contamination at the MJW facilities.

Any contamination above the limits described in 10 NYCRR Part 16 Appendix A Table 7 for a "Clean area" will be immediately reported to the MJW RSO and work activities will be suspended. Appropriate controls and corrective actions will be instituted by the MJW RSO and/or by a Certified Health Physicist. Events requiring additional controls or corrective actions will be reported to the assigned NYSDEC ERS.

Figures

Figure 1:

General Site and Local Background Area

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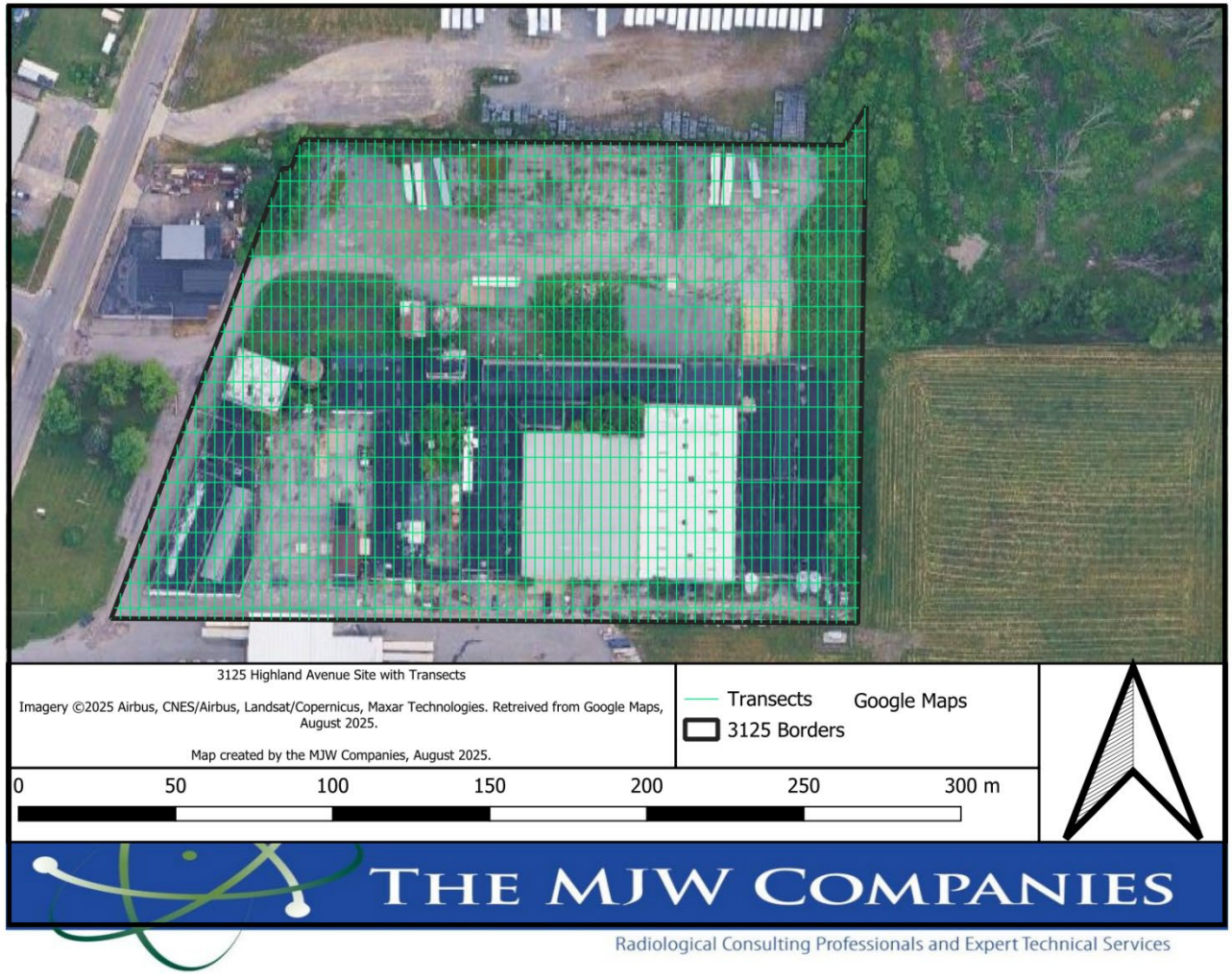
Figure 2:

3125 Highland Ave Site Transect Plan



THE MJW COMPANIES
Radiological Consulting Professionals and Expert Technical Services

Attachment 4. MJWRCP-66 Soil Sampling Procedures

THE MJW COMPANIES Radiological Consulting Professionals and Expert Technical Services		MJWRCP-66 Rev. 0
PROCEDURE FOR SOIL SAMPLING FOR RADIOACTIVE MATERIAL		**FIELD PROCEDURE**
Effective Date: 12/16/20	Approved By: *M.J. Willett*	

1.0 PURPOSE

This procedure describes the general and specific procedures, methods and considerations to be used and observed when collecting soil samples for field screening and/or laboratory analysis.

2.0 SCOPE

The procedures described in this document are to be used by qualified field personnel when collecting and handling soil samples in the field. If MJW field personnel determine if any of the procedural steps may be inappropriate, they will contact their field supervisor immediately to discuss and resolve the issue. Any and all such issues will be recorded in the field logbook.

3.0 SAFETY PRECAUTIONS

Proper safety precautions must be observed when collecting soil samples. Field personnel must refer to the RECON Project Health & Safety Plan Rev 1 for guidelines on safety precautions to be followed for this type of field work.

4.0 PROCEDURAL PRECAUTIONS

Special care must be taken not to contaminate collected samples. This includes but it not limited to storing samples in a secure location to preclude conditions which could alter the properties of the sample. Samples shall be custody sealed during long-term storage or shipment. Collected samples are in the custody of the sampler or sample custodian until the samples are relinquished to another party. If samples are transported by the sampler, they will remain under his/her custody or be secured until they are relinquished.

5.0 FIELD OPERATIONS

5.1 General

These sampling methods are used primarily to collect surface and shallow subsurface soil samples. Surface soils are generally classified as soils between the ground surface and 6 to 12 inches below ground surface (BGS). The most common interval is 0 to 6

inches BGS, however, the data quality objectives of the investigation may dictate another interval, i.e., 0-3 inches BGS, for risk assessment purposes. The shallow subsurface interval may be considered to extend from approximately 12 inches BGS to a site-specific depth at which sample collection using manual collection methods becomes impractical.

5.2 Soil Collection Using Spoons

Stainless steel spoons may be used for surface soil sampling to depths of approximately 6 inches BGS where conditions are generally soft and non-indurated and there is no problematic vegetative layer to penetrate. If the soil being sampled is cohesive and crumbles when removed from the ground surface, consider using a hand auger to collect the sample.

When compositing a sample, make sure each composite location consists of equal volumes, i.e., same number of equal spoonfuls. If a thick matted root zone is present at or near the surface, it should be removed before the sample is collected.

5.3 Soil Collection Using Hand Augers

Hand augers may be used to advance boreholes and collect soil samples in the surface and shallow subsurface intervals. Typically, 4-inch stainless steel auger buckets with cutting heads are used. The bucket is advanced by simultaneously pushing and turning using an attached handle. Auger buckets may be used with a handle alone or with a handle and extensions. The bucket is advanced to the appropriate depth and the contents are transferred to the homogenization container for processing.

The practical depth of investigation using a hand auger depends on the soil properties and depth of investigation. For example, sandy soil may flow out or collapse at depth. Conversely, tight clays and cemented sands may offer too much resistance to sampling and powered equipment may need to be used.

Because of the tendency for the auger bucket to scrap material from the sides of the auger hole while being extracted, the top several inches of soil in the auger bucket should be discarded prior to placing the bucket contents in the homogenization container for processing. The hand auger assembly must be decontaminated between each borehole that is advanced per Section 5.5.

5.4 Sample Collection, Identification and Documentation

A nominal 500-gram (1.1 lb) sample will be collected and placed into a double-lined plastic bag or sealable laboratory containers. When necessary, additional borings will be placed adjacent to the original location to obtain adequate sample volume for laboratory testing. When multiple borings and core samples are required to obtain adequate sample volume, a composite sample from similar materials and at approximately equal depths of the cores used, will be collected for analysis.

All samples will be labeled to include:

- Location ID
- Depth
- Date/time
- Sampler
- Sample number
- Radiation readings (Gross CPM)
- Analyses required

Sample bags or containers will be transported in totes, coolers, or similar to the radiological storage area pending completion of GEL laboratories Chain-of-Custody (COC) forms (Attachment 1), and shipment for analysis. COC forms will be completed as required and will reflect laboratory analysis for gamma spectroscopy using method 901.1 (HASL 300) and/or alpha spectroscopy for U and Th isotopic. All samples will be submitted via contract carrier.

Sample IDs will consist of an alpha-numeric code including the location, boring ID, sample matrix, sample type, sample depth, and an identifier for composite sample.

- Location: This will be site coordinate and map location
- Sample ID: A sample designation starting with SU1 or BRA (survey unit designation) followed by dash and a two-digit number separated by dash for sample ID, followed by depth designation (A =0-6, B=6-12, C=0-12, D=12-18, as appropriate)
- Sample Matrix: So (soil), Con (concrete) or other.
- If the sample is a composite sample, the sample ID will have the letter C at the end.

Example #1: SU1-2-1ASoC. A soil sample (So) collected at soil sampling location (2-1), from 0.0 to 6 inches bgs (A), composite (C).

Samples will be analyzed by a ELAP certified laboratory. Sample custody will be documented, and analysis requirements communicated using laboratory provided Chain of Custody Forms

5.5 Step for Sampling Equipment Decontamination

Decontamination efforts will follow a four-step approach for hand tools and equipment used to collect samples. The four-step approach for sampling equipment decontamination is as follows:

- A detergent and water wash to remove all visible particulate matter and residual oils and grease.

- Tap water rinse.
- Distilled and deionized water rinse (for samples requiring chemical analyses)
- Scan equipment between each use using on-site surface radiation equipment.

Attachment 1. GEL Laboratories Chain of Custody Form

Page: _____ of _____
Project #:
GEL Quote #: _____
COC Number (1): _____
PO Number:

GEL Chain of Custody and Analytical Request
See www.gel.com for GEL's Sample Acceptance SOP
GEL Work Order Number:

GEL Laboratories, LLC
2040 Savage Road
Charleston, SC 29407
Phone: (843) 556-8171
Fax: (843) 766-1178

Client Name: | Phone #:
Project/Site Name: | Fax #:
Address:
Collected by: | Send Results To:

Sample Analysis Requested (5) (Fill in the number of containers for each test)

Sample ID * For composites - indicate start and stop date/time	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code (2)	Field Filtered (3)	Sample Matrix (4)	Should this sample be considered: Radioactive	Should this sample be considered: TSCA Regulated	Number of containers	<-- Preservative Type (6)	Comments
										Note: extra sample is required for sample specific QC

TAT Requested: Normal: _____ Rush: _____ Specify: _____ (Subject to Surcharge) | Fax Results: Yes / No | Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: *Are there any known hazards applicable to these samples? If so, please list the hazards*

Sample Collection Time Zone
Eastern Pacific
Central Other _____
Mountain

Chain of Custody Signatures

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1			1		
2			2		
3			3		

Sample Shipping and Delivery Details
GEL PM:
Method of Shipment: | Date Shipped:
Airbill #:
Airbill #:

1.) Chain of Custody Number = Client Determined
2.) QC Codes: **N** = Normal Sample, **TB** = Trip Blank, **FD** = Field Duplicate, **EB** = Equipment Blank, **MS** = Matrix Spike Sample, **MSD** = Matrix Spike Duplicate Sample, **G** = Grab, **C** = Composite
3.) Field Filtered: For liquid matrices, indicate with a - **Y** - for yes the sample was field filtered or - **N** - for sample was not field filtered.
4.) Matrix Codes: **DW**=Drinking Water, **GW**=Groundwater, **SW**=Surface Water, **WW**=Waste Water, **W**=Water, **ML**=Misc Liquid, **SO**=Soil, **SD**=Sediment, **SL**=Sludge, **SS**=Solid Waste, **O**=Oil, **F**=Filter, **P**=Wipe, **U**=Urine, **F**=Fecal, **N**=N
5.) Sample Analysis Requested: Analytical method requested (i.e. **8260B**, **6010B/7470A**) and number of containers provided for each (i.e. *8260B* - **3**, *6010B/7470A* - **1**).
6.) Preservative Type: **HA** = Hydrochloric Acid, **NI** = Nitric Acid, **SH** = Sodium Hydroxide, **SA** = Sulfuric Acid, **AA** = Ascorbic Acid, **HX** = Hexane, **ST** = Sodium Thiosulfate, If no preservative is added = leave field blank

For Lab Receiving Use Only
Custody Seal Intact? *YES* *NO*
Cooler Temp: _____ C

WHITE = LABORATORY **YELLOW = FILE** **PINK = CLIENT**

Surface and Shallow Subsurface Soil Sampling Check List

Conduct Tailgate Safety Review…….._____ _____ _____ _____

(date) (date) (date) (date)

Review sampling parameters ……..……_____ _____ _____ _____

(date) (date) (date) (date)

Determine required tools based upon sampling desire (hand augurs or spoons etc.) ……. _____ _____ _____ _____

(date) (date) (date) (date)

Verify all required tools, supplies, and equipment available ……._____ _____ _____ _____

(date) (date) (date) (date)

Prepare radiological instruments for use and perform operability checks……. _____ _____ _____ _____

(date) (date) (date) (date)

Collect Digital image(s) including location sign……_____ _____ _____ _____

(date) (date) (date) (date)

Document relevant terrain, location, and other relevant physical features……._____ _____ _____ _____

(date) (date) (date) (date)

Collect and ID samples in accordance with procedure and sampling parameters ……._____ _____ _____ _____

(date) (date) (date) (date)

Document relevant sample features such as clay, sandy, different colors etc. ……_____ _____ _____ _____

(date) (date) (date) (date)

Verify all required samples have been collected and documentation is complete_____ _____ _____ _____

(date) (date) (date) (date)

Pack samples and equipment for transport back to vehicle(s)…… _____ _____ _____ _____

(date) (date) (date) (date)

Transport samples and equipment to Storage facility…….._____ _____ _____ _____

(date) (date) (date) (date)

Decontaminate the tools…….._____ _____ _____ _____

(date) (date) (date) (date)

Fill out appropriate paperwork for sample chain of custody ……_____ _____ _____ _____

(date) (date) (date) (date)