

Survey Areas 1 and WNYNSC Confirmatory

Survey and Sampling

Field Guide

1. INTRODUCTION AND PURPOSE

The purpose of this survey and sampling field guide (SSFG) is to:

- Present the survey and sampling parameters and objectives directly pertinent to Survey Area1 and for the confirmatory survey and sampling points on the Western New York Nuclear Service Center (WNYNSC) property.
- Ensure all pertinent information is collected
- Guide the survey and sampling team through the survey and sampling process.

2. GENERAL DESCRIPTION OF THE SURVEY AREAS

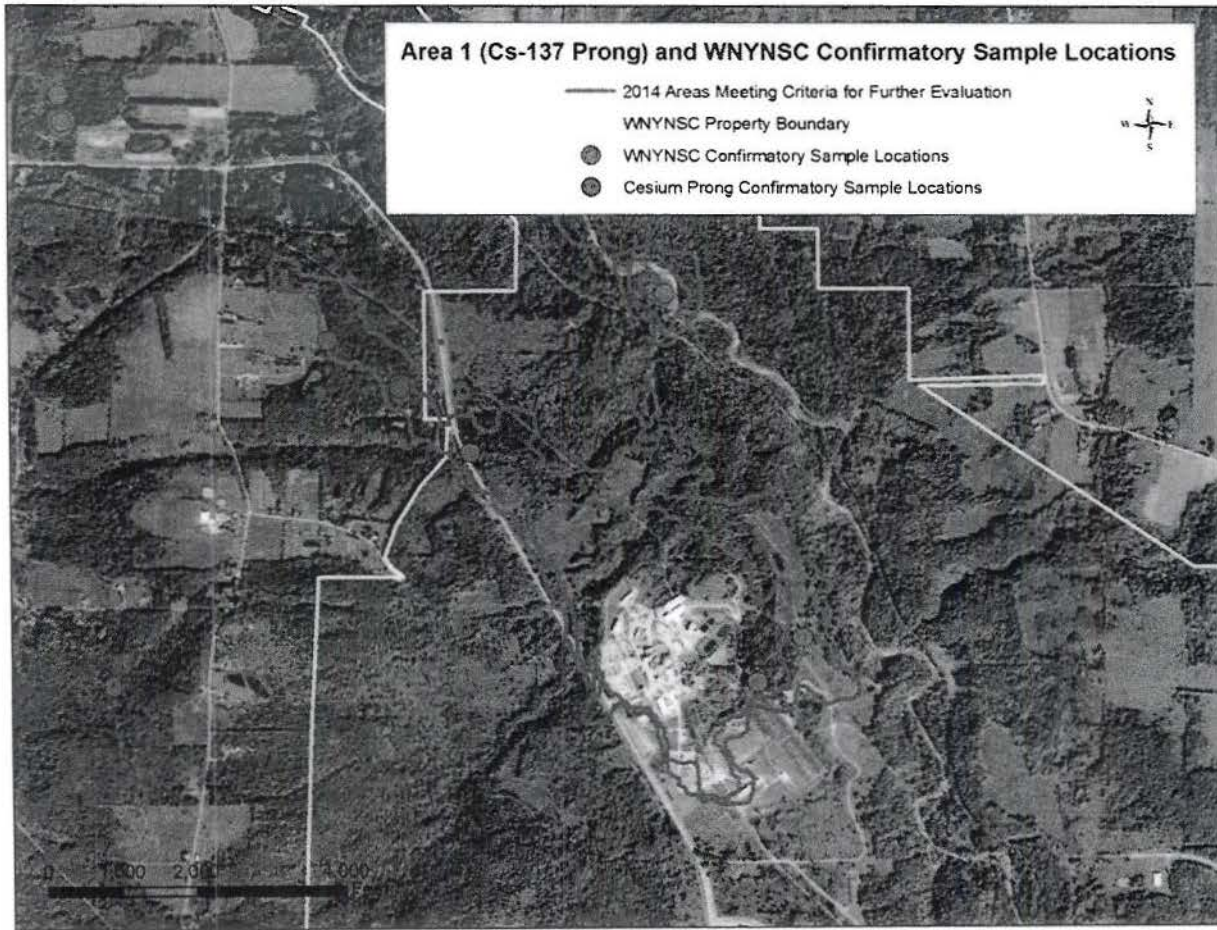
Survey Area 1 encompasses an area outside the boundaries of NSC that has been previously characterized as “The Prong”. It largely consists of private properties generally to the North and East of the site boundary. For the off-site areas, surveying and sampling activities will only be performed on properties for which consent by the property owners has been obtained. It is important to respect the property boundaries to avoid entry into areas where access has not been authorized by the property owner(s).

In addition to Survey Area 1, confirmatory data will be collected in specified locations on the NSC property.

Figure 1 shows the general location of Survey Area 1 and the confirmatory survey locations on the NSC property. Because no walk over GPS radiation surveys will be conducted, no “Survey Boxes” are present. Figure 2 shows the layout of the private property boundaries for areas that will be surveyed. Entry and egress from the sampling areas should not intrude into unauthorized areas.

Table 1 provides the location number and GPS coordinates for the confirmatory sampling points in Area 1, and on the NSC property.

Figure 1



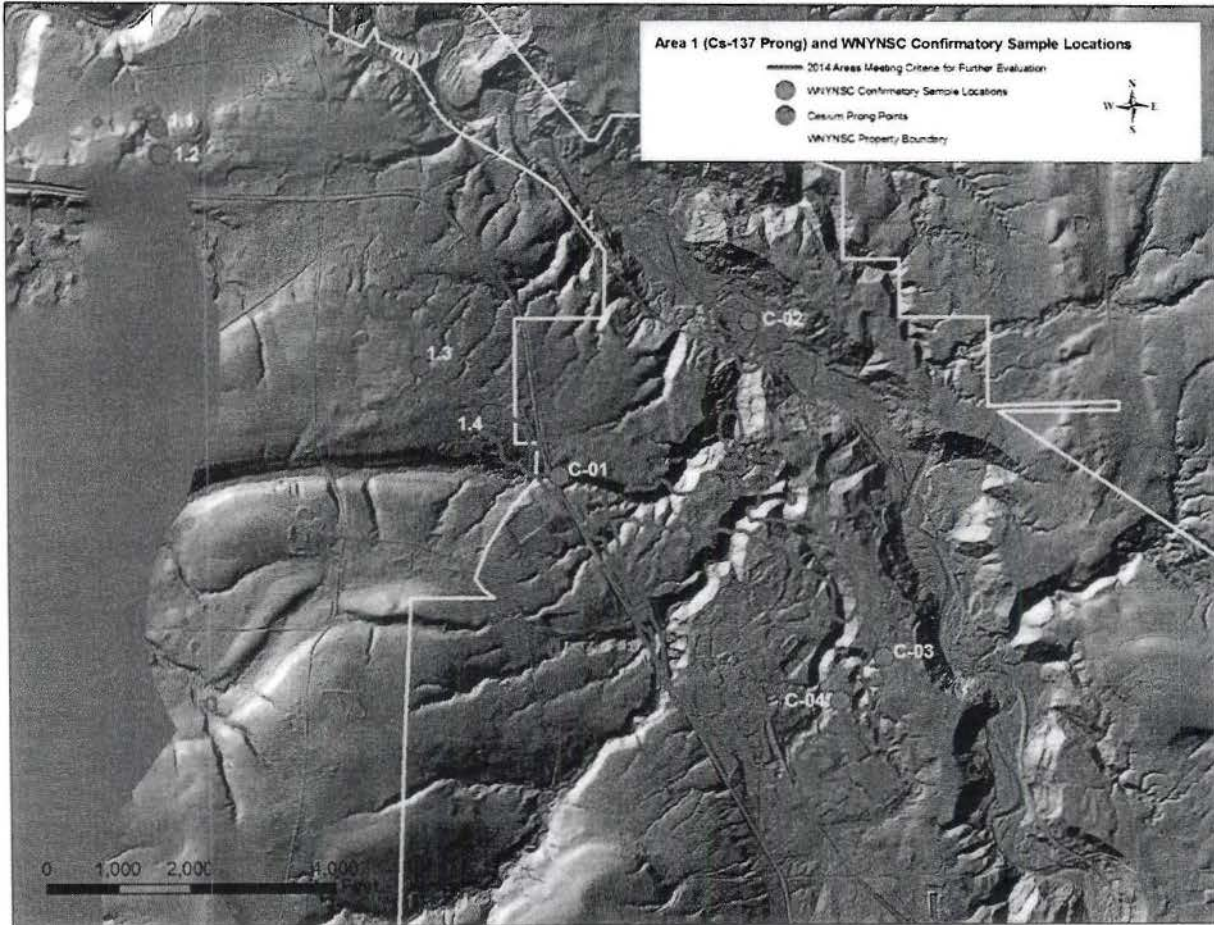


Figure 2

FIGURE 2 is zoomed in on the prong area and shows sample locations there and the property boundaries

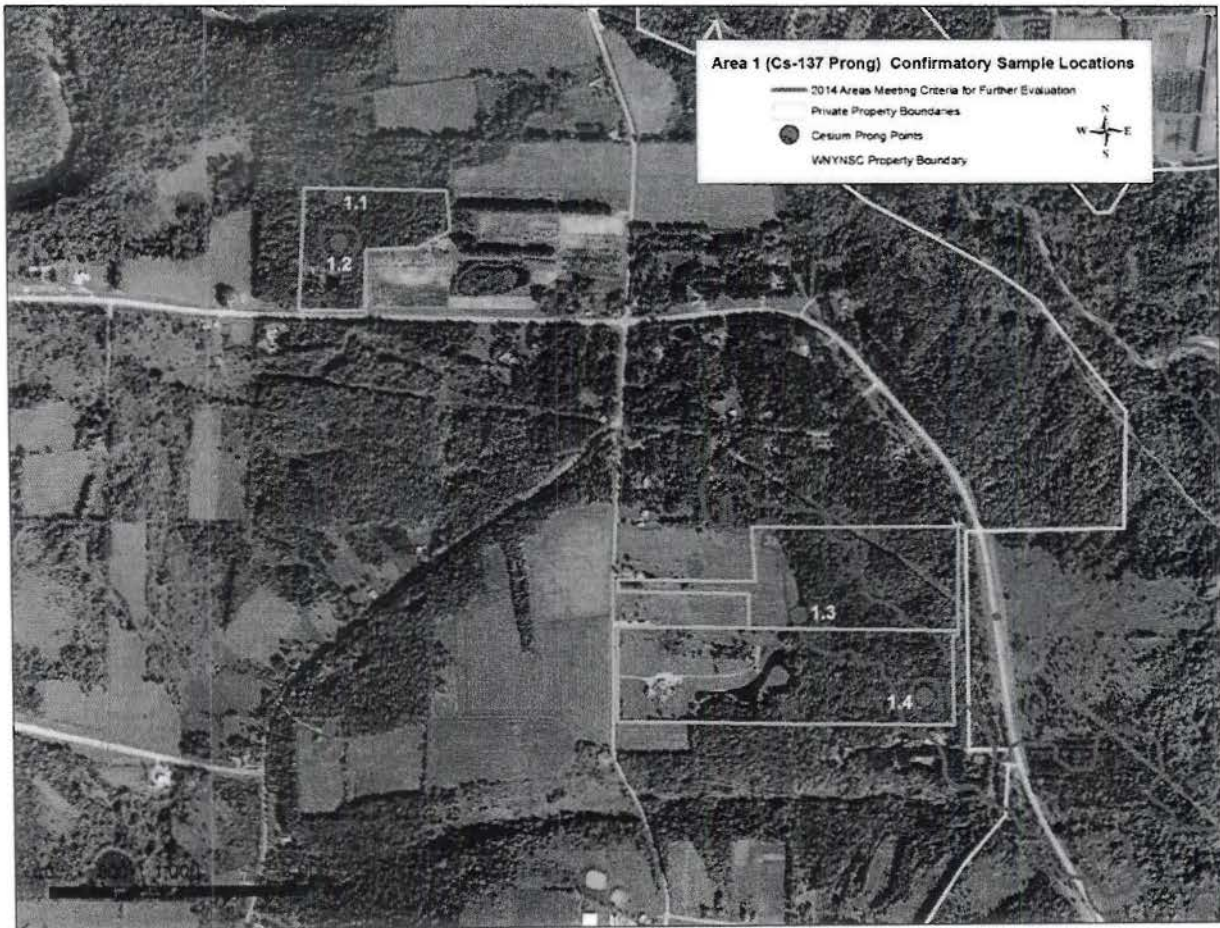


TABLE 1
Sampling Location Coordinates

Point ID	Latitude	Longitude
C-01	42°27'30.28" N	78°39'50.05" W
C-02	42°27'51.92" N	78°39'14.97" W
C-03	42°27'05.46" N	78°38'50.73" W
C-04	42°26'59.47" N	78°38'58.80" W
1.1	42°28'17.82" N	78°41'03.63" W
1.2	42°28'14.15" N	78°41'04.00" W
1.3	42°27'45.80" N	78°40'15.65" W
Deleted	Deleted	Deleted

STEP ONE- GPS SURVEY OPERATIONS

THIS STEP NOT APPLICABLE TO AREA1 ANS CONFIRMATORY SURVEY POINTS

STEP TWO- STATIC RADIATION MEASUREMENTS (Initial as Performed)

Conduct Tailgate Safety Review..... ^{10/10/15} JB ^{10/22/15}

SURVEY AREA 1 SURVEY POINTS

Review sampling parameters JB

Verify all required tools, supplies, and equipment available (For survey and sampling operations)..... JB

Prepare radiological instruments for use and perform operability checks JB

For each designated survey location:

Collect static radiation readings in accordance with procedure..... JB

Document relevant terrain, location, and other relevant physical features..... JB

(Note: While At each location also complete sample collection as per Step 3 Below)

WNYNSC CONFIRMATORY SURVEY POINTS

Review survey and sampling locations..... ^{10/22/15} JB JB

Verify all required tools, supplies, and equipment available..... JB JB

Prepare radiological instruments for use and perform operability checks..... JB JB

For each designated survey location:

Collect and document static radiation readings in accordance with procedure..... JB JB

Document relevant terrain, location, and other relevant physical features JB JB

(Note: While At each location also complete sample collection as per Step 3 Below)

10/21/15
10/22/15
11/21/15
TB JB JB

Verify all survey and sampling points are completed and documented.....

STEP THREE- SAMPLE COLLECTION OPERATIONS (Initial as Performed)

SURVEY AREA 1 SURVEY POINTS

10/21/15
10/22/15

Review survey locations and sampling parameters.....

TB JB

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

TB JB

For each designated sampling location:

Collect samples in accordance with procedure and specified sampling parameters.....

TB JB

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

TB JB

Verify all required samples have been collected and documentation is complete.....

TB JB

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

TB JB

Collect Rinsate sample for sampling tools in accordance with procedure.....

TB JB

Transport samples and equipment to Bulk Storage Warehouse.....

TB JB

Photocopy all Chain of Custody Forms.....

TB

Log all samples into the inventory log.....

TB

Place samples in storage in designated storage bins.....

TB

Conduct debrief.....

TB

WNYNSC CONFIRMATORY SURVEY POINTS

11/27/15
11/2/15

Review survey locations and sampling parameters..... 4B 4B

Verify all required tools, supplies, and equipment available..... 4B 4B

For each designated sampling location:

Collect samples in accordance with procedure and specified sampling parameters..... 4B 4B

Document relevant sample features such as clay, sandy, different colors etc. 4B 4B

Verify all required samples have been collected and documentation is complete..... 4B 4B

Pack samples and equipment for transport back to vehicle(s)..... 4B 4B

Collect Rinsate sample for sampling tools in accordance with procedure..... 4B 4B

Transport samples and equipment to Bulk Storage Warehouse..... 4B 4B

Photocopy all Chain of Custody Forms..... 4B

Log all samples into the inventory log..... 4B

Place samples in storage in designated storage bins..... 4B

Conduct debrief..... 4B

5 COMMUNICATION PLAN

It is anticipated that there will be cellular service in the survey areas, and since these areas are not remote, no special communication requirements apply other than periodic accountability checks.

6 RELEVANT PROCEDURES AND DOCUMENTS

- RCP-02 Rev. 2, 6/1/2014 Instrument Operating Procedure Bicron MicroRem Meter
- RCP-01 Instrument Operating Procedure Ludlum 2241-2 Ratemeter/Scaler Coupled With the Ludlum 44-9 Geiger-Mueller (GM) and 44-10 2x2 NaI Detectors
- Project Quality Assurance Project Plan (QAPP)
- NYSERDA Environmental Survey Project Procedure 1 : Soil Sample Collection and Radiological Survey Procedure
- Project Health and Safety Plan (HASP)

- RCP-03 Rev 3. 9/15/15 Performing a GPS Enhanced Overland Gamma Radiation Survey Including the Preparation and Assessment of Radiological and Geographical Data

Attachments and other Documents:

- Maps (including topo and satellite – larger scale)
- Sampling Specifications Sheets
- Sample collection forms
- Chain of Custody Forms
- Logbooks

Table 2

Area 1

Static Survey and Sample Collection Specifications

Location Number	Sample Number	Depth (cm) 0-5	Depth (cm) 5-15	Depth (cm) 15-30		
					Latitude	Longitude
1	1.1.C1	x			42°28'17.82" N	78°41'03.63" W
1	1.1.C2		x		" "	" "
1	1.1.C3			x	" "	" "
2	1.2.C1	x			42°28'14.15" N	78°41'04.00" W
2	1.2.C2		x		" "	" "
2	1.2.C3			x	" "	" "
3	1.3.C1	x			42°27'45.80" N	78°40'15.65" W
3	1.3.C2		x		" "	" "
3	1.3.C3			x	" "	" "
3	1.3.C5	x			" "	" "
3	1.3.C6		x		" "	" "
3.1.Rinse	TBD					

10-22-15 C
 10-22-15 C
 10-22-15 C
 10-22-15 C
 10-22-15 C
 10-22-15 C
 10-21-15 C
 10-21-15 C
 10-21-15 C
 10-21-15 C
 10-21-15 C

Table 3
WNY Confirmatory
Static Survey and Sample Collection Specifications

Location Number	Sample Number	Depth (cm)	Depth (cm)	Depth (cm)	Depth (cm)	Latitude	Longitude
		0-5	5-15	15-30	30-100		
1	C.1.C1	x				42°27'30.28" N	78°39'50.05" W
1	C.1.C2		x				
1	C.1.C3			x			
2	C.2.C1	x				42°27'51.92" N	78°39'14.97" W
2	C.2.C2		x				
2	C.2.C3			x			
2	C.2.C4				X		
2	C.2.C5				X		
3	C.3.C1	x				42°27'05.46" N	78°38'50.73" W
3	C.3.C2		x				
3	C.3.C3			x			
4	C.4.C1	x				42°26'59.47" N	78°38'58.80" W
4	C.4.C2		x				
4	C.4.C3			x			
4	C.4.C5	x				42°26'59.47" N	78°38'58.80" W
Rinsate							

10-27-15 C
 10-27-15 C
 10-27-15 C
 10-27-15 C
 10-27-15 C
 10-27-15 C
 10-27-15 C
 10-27-15 C
 11-2-15 C
 11-2-15 C
 11-2-15 C
 11-2-15 C
 11-2-15 C
 11-2-15 C
 11-2-15 C

10-13-15

Authorized Personnel for WNYNSC Survey and Sampling Operations

J Brown

J Gerber

C Iseman

D Kearny

S Kinsman

G Roseman

Survey Areas 2.1 and 2.2

Survey and Sampling Field Guide

INTRODUCTION AND PURPOSE

The purpose of this survey and sampling field guide (SSFG) is to:

- Present the survey and sampling parameters and objectives directly pertinent to Survey Area 2.
- Ensure all pertinent information and documentation is recorded.
- Guide the survey and sampling team through the survey and sampling process.

GENERAL DESCRIPTION OF THE SURVEY AREAS

Survey Areas 2.1 and 2.2 are located North and West of the Western New York Nuclear Service Center (WNYNSC) in the vicinity of Cattaraugus Creek and Route 219 near Scoby Dam. Area 2.1 is South of Scoby Dam, bounded by Scoby Road to the West and Cattaraugus Creek to the East. Area 2.2 lies East of Route 219 and bounded to the South and East by Cattaraugus Creek. Because of the topography it may be necessary to access Area 2.1 from the North.

Figure 1 shows Survey areas 2.1 and 2.2, respectively, surrounded by rectangular survey area boxes. The GPS coordinates of the corners of the boxes are provided in Table 1. The purpose of the boxes is to guide the survey team by GPS coordinates to the area surrounding the parcels to be surveyed and assist in establishing GPS grid survey paths and spacing.

Figure 1





SURVEY AREA GPS COORDINATES and Grid Spacing

Area 2.1	Center of survey area	42°28'47.78" N	78°42'02.74" W
	Guide Box N Bound	42°28'48.05" N	
	Guide Box S Bound	42°28'47.53" N	
	Guide Box W Bound	78°42'03.12" W	
	Guide Box E Bound	78°42'02.35" W	
Area 2.2	Center of survey area	42°28'24.46" N	78°41'38.77" W
	Guide Box N Bound	42°28'24.91" N	
	Guide Box S Bound	42°28'24.04" N	
	Guide Box W Bound	78°41'39.55" W	
	Guide Box E Bound	78°41'37.99" W	

STEP ONE - GPS SURVEY OPERATIONS (Initial as Performed)

Conduct Tailgate Safety Review.....

Survey Area 2.1

Review survey parameters.....

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

Assemble and test GPS survey equipment.....

Perform Operability Checks.....

Survey Baseline/Function Check Area.....

Establish and Mark Corners of the Survey Area Box.....

Evaluate terrain and field conditions and select orientation of survey lines.....

___ North and South ___ East and West

Area 2.1 was in a remote location and located on a steep slope. Canopy was closed so GPS survey was not done - plus it would have been difficult/unsafe to attempt to wear backpack.

All readings/locations that could be reached were hand surveyed with 2x2 and documented.



Used sketch for 2.1

- Conduct Survey
- Verify all documentation complete.....
- Break down Gear and Equipment, pack, and transport to Survey Area 2.2

Survey Area 2.2

- Review survey parameters.....
- Verify all required tools, supplies, and equipment available.....
- Assemble and test GPS survey equipment.....
- Perform Operability Checks.....
- Survey Baseline/Function Check Area.....
- Establish and Mark Corners of the Survey Area Box.....
- Evaluate terrain and field conditions and select orientation of survey lines.....

___ North and South ___ East and West

- Conduct Survey
- Verify all documentation complete.....
- Perform final operability checks.....
- Break down gear and equipment, pack, and transport to vehicles.....
- Ensure all sources accounted for.....
- Download data from GPS to computer..... N/A
- Make Duplicate electronic copy of data..... N/A
- Email data to person designated to evaluate data..... N/A
- Copy and scan all data, notes, sheets, etc.
- Email scanned documents to person designated to evaluate data

string survey - not enough satellites for GPS survey - closed canopy. corners marked and survey locations marked with flags and string



Debrief.....

STEP TWO- STATIC RADIATION MEASUREMENTS (Initial as Performed)

Conduct Tailgate Safety Review.....

Survey Area 2.1

Review sampling parameters

Verify all required tools, supplies, and equipment available (For survey and sampling operations).....

Prepare radiological instruments for use and perform operability checks

For each designated survey location:

Collect static radiation readings in accordance with procedure.....

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

(Note: While At each location also complete sample collection as per Step 3 Below)

Survey Area 2.2

Review survey and sampling locations.....

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

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

For each designated survey location:

Collect and document static radiation readings in accordance with procedure.....

Document relevant terrain, location, and other relevant physical features

(Note: While At each location also complete sample collection as per Step 3 Below)

Verify all survey and sampling points are completed and documented.....

STEP THREE- SAMPLE COLLECTION OPERATIONS (Initial as Performed)

Survey Area 2.1

- Review survey locations and sampling parameters..... TB
- Verify all required tools, supplies, and equipment available..... TB
- For each designated sampling location:
 - Collect samples in accordance with procedure and specified sampling parameters..... TB
 - Document relevant sample features such as clay, sandy, different colors etc. TB
 - Verify all required samples have been collected and documentation is complete..... TB
 - Pack samples and equipment for transport back to vehicle(s)..... TB
 - Collect Rinsate sample for sampling tools in accordance with procedure..... TB
 - Transport samples and equipment to Bulk Storage Warehouse..... TB
 - Photocopy all Chain of Custody Forms..... TB
 - Log all samples into the inventory log..... TB
 - Place samples in storage in designated storage bins..... TB
 - Conduct debrief..... TB

Survey Area 2.2

- Review survey locations and sampling parameters..... TB
- Verify all required tools, supplies, and equipment available..... TB



For each designated sampling location:

- Collect samples in accordance with procedure and specified sampling parameters..... TB
- Document relevant sample features such as clay, sandy, different colors etc. TB
- Verify all required samples have been collected and documentation is complete..... TB
- Pack samples and equipment for transport back to vehicle(s)..... TB
- Collect Rinsate sample for sampling tools in accordance with procedure..... TB
- Transport samples and equipment to Bulk Storage Warehouse..... TB
- Photocopy all Chain of Custody Forms..... TB
- Log all samples into the inventory log..... TB
- Place samples in storage in designated storage bins..... TB
- Conduct debrief..... TB

5 COMMUNICATION PLAN

It is anticipated that there will be cellular service in the survey areas, and since these areas are not remote, no special communication requirements apply other than periodic accountability checks.

6 RELEVANT PROCEDURES AND DOCUMENTS

- RCP-02 Rev. 2, 6/1/2014 Instrument Operating Procedure Bicon MicroRem Meter



MJV TECHNICAL SERVICES 10/18/15

- RCP-01 Instrument Operating Procedure Ludlum 2241-2 Ratemeter/Scaler Coupled With the Ludlum 44-9 Geiger-Mueller (GM) and 44-10 2x2 NaI Detectors
- Project Quality Assurance Project Plan (QAPP)
- NYSDERDA Environmental Survey Project Procedure 1 : Soil Sample Collection and Radiological Survey Procedure
- Project Health and Safety Plan (HASP)

- RCP-03 Rev 3. 9/15/15 Performing a GPS Enhanced Overland Gamma Radiation Survey Including the Preparation and Assessment of Radiological and Geographical Data

Attachments and other Documents:

- Maps (including topo and satellite – larger scale)
- Sampling Specifications Sheets
- Sample collection forms
- Chain of Custody Forms
- Logbooks

Area
 -2.2 2.1 TB10/23

Location	Sample Number				Date Collected	Depth (cm)	Depth (cm)	Depth (cm)	Latitude	Longitude
						0-5	5-15	15-100		
1	2.1	1	R.	1.	10-23-15	X			-78.700761	42.479976
1	2.1	1	R.	2.	10-23-15		X			
1	2.1	1	R.	3.	10-23-15			X		
1	2.1	1	R.	5.	10-23-15	X				
2	2.1	2	R.	1.	10-23-15	X			-78.700761	42.479963
2	2.1	2	R.	2.	10-23-15		X			
2	2.1	2	R.	3.	———— TB10/23			X		
3	2.1	3	R.	1.	10-23-15	X			-78.700777	42.479924
3	2.1	3	R.	2.	10-23-15		X			
3	2.1	3	R.	5.	10-23-15 TB10/23 10-23-15	X	X	X		
4	2.1	4	R.	1.	10-23-15	X			-78.700746	42.479947
4	2.1	4	R.	2.	10-23-15		X			
4	2.1	4	R.	3				X		
4	2.1	4	R.	5				X		
Rinsate	2.1	Rinsate			2.1.4.R.6	10-23-15				
Rinsate	2.1	Rinsate			2.1.4.R.7	10-23-15 - DI H ₂ O				

10/23
 TB
 1423

Area

~~2.2~~ 2.2

DOT

Location	Sample Number				Date Collected	Depth (cm)	Depth (cm)	Depth (cm)	Latitude	Longitude
						0-5	5-15	15-100		
1	2.2	1	R.	1.	10-20-15	X			-78.694044	42.473407
1	2.2	1	R.	2.	10-20-15		X			
1	2.2	1	R.	3	10-20-15			X		
1	2.2	1	R.	5	10-20-15	X				
2	2.2	2	R.	1	10-20-15	X			-78.694105	42.473448
2	2.2	2	R.	2	10-20-15		X			
2	2.2	2	R.	3	10-20-15			X		
3	2.2	3	R.	1	10-20-15	X			-78.694081	42.473461
3	2.2	3	R.	2	10-20-15		X			
3	2.2	3	R.	3	10-20-15			X		
4	2.2	4	R.	1	10-20-15	X			-78.694142	42.473502
4	2.2	4	R.	2	10-20-15		X			
4	2.2	4	R.	3	10-20-15			X		
4	2.2	4	R.	5	10-20-15			X		
Rinsate	2.1. Rinsate				2.2.4. R. 6 10-20-15					
Rinsate	2.1. Rinsate									

Survey Areas 3.1 and 3.2

Survey and Sampling Field Guide

INTRODUCTION AND PURPOSE

The purpose of this survey and sampling field guide (SSFG) is to:

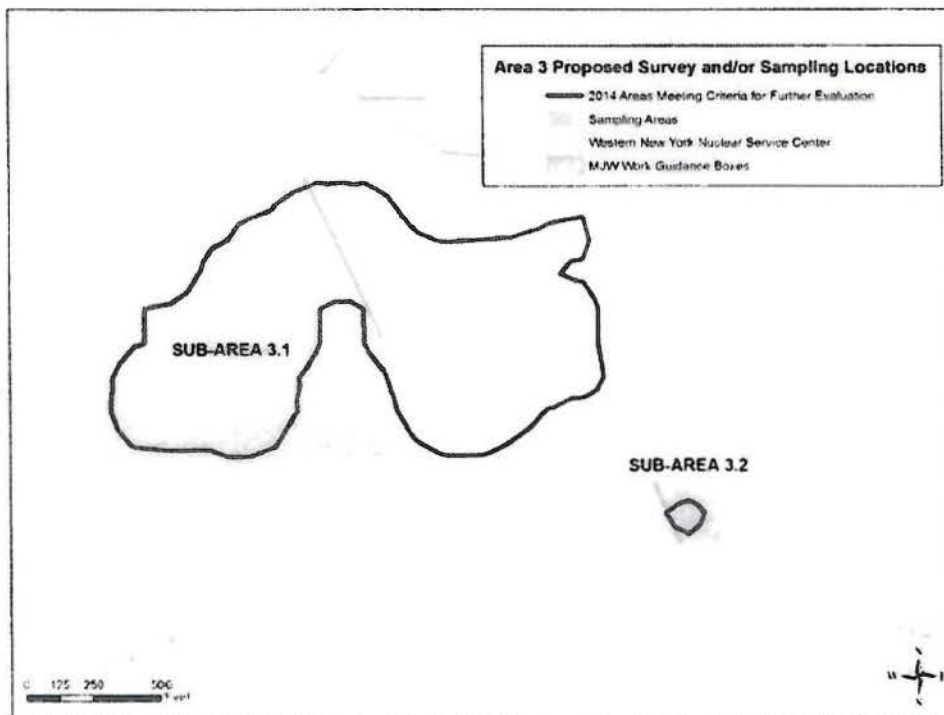
- Present the survey and sampling parameters and objectives directly pertinent to Survey Area 3.
- Ensure all pertinent information and documentation is recorded.
- Guide the survey and sampling team through the survey and sampling process.

GENERAL DESCRIPTION OF THE SURVEY AREAS

Survey areas 3.1 and 3.2 are located on a working farm. Survey Area 3.1 lies across a portion of a tilled corn field and is approximately 47,000 square meters in size. Survey Area 3.2, which is approximately 1000 square meters in size, is located nearby to the South West. This area is not currently tilled.

Figure 1 shows Survey areas 3.1 and 3.2, respectively, surrounded by rectangular survey area boxes. The GPS coordinates of the corners of the boxes are provided in Table 1. The purpose of the boxes is to guide the survey team by GPS coordinates to the area surrounding the parcels to be surveyed and assist in establishing GPS grid survey paths and spacing.

Figure 1



SURVEY AREA GPS COORDINATES and Grid Spacing

Area 3.1 Grid Spacing 15 meters	Center of survey area	42°28'55.96" N	78°40'43.85" W
	Guide Box N Bound	42°29'00.74" N	
	Guide Box S Bound	42°28'52.61" N	
	Guide Box W Bound	78°40'48.39" W	
	Guide Box E Bound	78°40'38.11" W	
Area 3.2 Grid Spacing 5 meters	Center of survey area	42°28'51.49" N	78°40'26.97" W
	Guide Box N Bound	42°28'52.43" N	
	Guide Box S Bound	42°28'50.71" N	
	Guide Box W Bound	78°40'28.17" W	
	Guide Box E Bound	78°40'25.96" W	

STEP ONE - GPS SURVEY OPERATIONS (Initial as Performed)

Conduct Tailgate Safety Review..... JB

Survey Area 3.1

Review survey parameters..... JB

Verify all required tools, supplies, and equipment available..... JB

Assemble and test GPS survey equipment..... JB

Perform Operability Checks..... JB

Survey Baseline/Function Check Area..... JB

Establish and Mark Corners of the Survey Area Box..... JB

Evaluate terrain and field conditions and select orientation of survey lines..... JB

___ North and South ___ East and West



Conduct Survey JB

Verify all documentation complete..... JB

Break Down Gear and Equipment, pack, and transport to Survey Area 3.2 JB

Survey Area 3.2

Review survey parameters..... JB

Verify all required tools, supplies, and equipment available..... JB

Assemble and test GPS survey equipment..... JB

Perform Operability Checks..... JB

Survey Baseline/Function Check Area..... JB

Establish and Mark Corners of the Survey Area Box..... JB

Evaluate terrain and field conditions and select orientation of survey lines..... JB

___ North and South ___ East and West

Conduct Survey JB

Verify all documentation complete..... JB

Perform final operability checks..... JB

Break down gear and equipment, pack, and transport to vehicles..... JB

Ensure all sources accounted for..... JB

Download data from GPS to computer..... JB

Make Duplicate electronic copy of data..... JB

Email data to person designated to evaluate data..... JB

Copy and scan all data, notes, sheets, etc. JB

Email scanned documents to person designated to evaluate data JB



Debrief..... JB

STEP TWO- STATIC RADIATION MEASUREMENTS (Initial as Performed)

Conduct Tailgate Safety Review..... JB

Survey Area 3.1

Review sampling parameters JB

Verify all required tools, supplies, and equipment available (For survey and sampling operations)..... JB

Prepare radiological instruments for use and perform operability checks JB

For each designated survey location:

Collect static radiation readings in accordance with procedure..... JB

Document relevant terrain, location, and other relevant physical features..... JB

(Note: While At each location also complete sample collection as per Step 3 Below)

Survey Area 3.2

Review survey and sampling locations..... JB

Verify all required tools, supplies, and equipment available..... JB

Prepare radiological instruments for use and perform operability checks..... JB

For each designated survey location:

Collect and document static radiation readings in accordance with procedure..... JB

Document relevant terrain, location, and other relevant physical features JB

(Note: While At each location also complete sample collection as per Step 3 Below)

Verify all survey and sampling points are completed and documented..... JB

STEP THREE- SAMPLE COLLECTION OPERATIONS (Initial as Performed)

Survey Area 3.1

- Review survey locations and sampling parameters..... JB
- Verify all required tools, supplies, and equipment available..... JB
- For each designated sampling location:
 - Collect samples in accordance with procedure and specified sampling parameters..... JB
 - Document relevant sample features such as clay, sandy, different colors etc. JB
 - Verify all required samples have been collected and documentation is complete..... JB
 - Pack samples and equipment for transport back to vehicle(s)..... JB
 - Collect Rinsate sample for sampling tools in accordance with procedure..... JB
 - Transport samples and equipment to Bulk Storage Warehouse..... JB
 - Photocopy all Chain of Custody Forms..... JB
 - Log all samples into the inventory log..... JB
 - Place samples in storage in designated storage bins..... JB
 - Conduct debrief..... JB

5 COMMUNICATION PLAN

It is anticipated that there will be cellular service in the survey areas, and since these areas are not remote, no special communication requirements apply other than periodic accountability checks.

6 RELEVANT PROCEDURES AND DOCUMENTS

- RCP-02 Rev. 2, 6/1/2014 Instrument Operating Procedure Bicon MicroRem Meter
- RCP-01 Instrument Operating Procedure Ludlum 2241-2 Ratemeter/Scaler Coupled With the Ludlum 44-9 Geiger-Mueller (GM) and 44-10 2x2 NaI Detectors
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Attachments and other Documents:

- Maps (including topo and satellite – larger scale)
- Sampling Specifications Sheets
- Sample collection forms
- Chain of Custody Forms
- Logbooks

10/20/2015

AREA

3.1.

Location	Sample				Date	Depth	Depth	Depth	Depth			
	Number				Collected	(cm)	(cm)	(cm)	(cm)	Latitude	Longitude	
						0-15	15-30	30-60	60-100			
1.	3.1.	1.	E	1.	10/21-15	X				78.681076	42.480655	C
1.	3.1.	1.	E	2.	10-21-15		X					C
1.	3.1.	1.	E	3.	10-21-15			X				C
1.	3.1.	1.	E	4.	10-21-15				X			C
1.	3.1.	1.	E	5.	10-21-15	X						C
1.	3.1.	1.	E	6.	10-21-15		X					C
1.	3.1.	1.	E	7.	10-21-15			X				C
1.	3.1.	1.	E	8.	10-21-15				X			C
2.	3.1.	2.	E	1.	10-20-15	X				78.680836	42.480591	C
2.	3.1.	2.	E	2.	10-20-15		X					C
2.	3.1.	2.	E	3.	10-20-15			X				C
2.	3.1.	2.	E	4.	10-20-15				X			C
3.	3.1.	3.	E	1.	10-20-15	X				78.679483	42.481348	C
3.	3.1.	3.	E	2.	10-20-15		X					C
3.	3.1.	3.	E	3.	10-20-15			X				C
3.	3.1.	3.	E	4.	10-20-15				X			C
4.	3.1.	4.	R.	1.	10-21-15	X				78.679815	42.481788	C
4.	3.1.	4.	R.	2.	10-21-15		X					C
4.	3.1.	4.	R.	3.	10-21-15			X				C
4.	3.1.	4.	R.	4.	10-21-15				X			C
5.	3.1.	5.	R.	1.	10-21-15	X				78.678638	42.482419	C
5.	3.1.	5.	R.	2.	10-21-15		X					C
5.	3.1.	5.	R.	3.	10-21-15			X				C
5.	3.1.	5.	R.	4.	10-21-15				X			C
6.	3.1.	6.	R.	1.	10-21-15	X				78.678345	42.483259	C
6.	3.1.	6.	R.	2.	10-21-15		X					C
6.	3.1.	6.	R.	3.	10-21-15			X				C
6.	3.1.	6.	R.	4.	10-21-15				X			C
7.	3.1.	7.	R.	1.	10-19-15	X				78.678931	42.481462	C
7.	3.1.	7.	R.	2.	10-19-15		X					C
8.	3.1.	8.	R.	1.	10-19-15	X				78.678712	42.481673	C
8.	3.1.	8.	R.	2.	10-19-15		X					C
9.	3.1.	9.	E	1.	10-20-15	X				78.679684	42.481295	C
9.	3.1.	9.	E	2.	10-20-15		X					C

E = 1,2,3,9,10,11,12

10/20/15 rinsate 3.1 3.1.9.E.6 C

10/21/15 rinsate 3.1 3.1.5.R.6 C

AREA
3.1.
Continued

10/20/2015

Location	Sample Number				Date Collected	Depth (cm) 0-15	Depth (cm) 15-30	Depth (cm) 30-60	Depth (cm) 60-100	Latitude	Longitude
10	3.1.	10	E	1.	10/21/15	X				78.680003	42.481206
10	3.1.	10	E	2.	10/21/15		X				
11	3.1.	11	E	1.	10/21/15	X				78.67939	42.480774
11	3.1.	11	E	2.	10/21/15		X			78.67970	42.48112
12	3.1.	12	E	1.	10/21/15	X				78.680317	42.480774
12	3.1.	12	E	2.	10/21/15		X				
13	3.1.	13	R.	1.	10/21/15	X				78.679742	42.482162
13	3.1.	13	R.	2.	10/21/15		X				
14	3.1.	14	R.	1.	10/21/15	X				78.678565	42.482793
14	3.1.	14	R.	2.	10/21/15		X				
15	3.1.	15	R.	1.	10/21/15	X				78.679153	42.481742
15	3.1.	15	R.	2.	10/21/15		X				
16	3.1.	16	R.	1.	10/21/15	X				78.677975	42.482373
16	3.1.	16	R.	2.	10/21/15		X				
17	3.1.	17	R.	1.	10-20-15	X				78.678269	42.481953
17	3.1.	17	R.	2.	10-20-15		X				
17	3.1.	17	R.	5	10-20-15	X				78.678269	42.481953
17	3.1.	17	R.	6	10-20-15		X				
18	3.1.	18	R.	1.	10-20-15	X				78.678859	42.482582
18	3.1.	18	R.	2.	10-20-15		X				
19	3.1.	19	R.	1.	10-20-15	X				78.678748	42.482232
19	3.1.	19	R.	2.	10-20-15		X				
20	3.1.	20	R.	1.	10-20-15	X				78.678159	42.481813
20	3.1.	20	R.	2.	10-20-15		X				
21	3.1.	21	R.	1.	10-20-15	X				78.679632	42.482442
21	3.1.	21	R.	2.	10-20-15		X				
22	3.1.	22	R.	1.	10-20-15	X				78.678455	42.483073
22	3.1.	22	R.	2.	10-20-15		X				
23	3.1.	23	R.	1.	10-20-15	X				78.679043	42.482022
23	3.1.	23	R.	2.	10-20-15		X				
24	3.1.	24	R.	1.	10-20-15	X				78.677865	42.482653
24	3.1.	24	R.	2.	10-20-15		X				
Rinsate											
Rinsate											

location not accessible changed as per L. Henri

copy

Area
3.2.

Location	Sample Number	Date Collected	Depth (cm)	Depth (cm)	Depth (cm)	Depth (cm)	Latitude	Longitude
			0-15	15-30	30-60	60-100		
1.	3.2 1. R. 1.	10-16-15	X				78.674062	42.48093
1.	3.2 1. R. 2.	10-16-15		X				
1.	3.2 1. R. 5	10-16-15	X					
2	3.2 2 R. 1.	10-16-15	X				78.674289	42.481001
2	3.2 2 R. 2.	10-16-15		X				
3	3.2 3 R. 1.	10-16-15	X				78.674107	42.48088
3	3.2 3 R. 2.	10-16-15		X				
4	3.2 4 R. 1	10-19-15	X				78.674198	42.48095
4	3.2 4 R. 2	10-19-15		X				
4	3.2 4 R. 3	10-19-15			X			
4	3.2 4 R. 4	10-19-15				X		
4	3.2 4 R. 5	10-19-15				X		
Rinsate	3.2 Rinsate 1.R.6	10-16-15						
Rinsate	3.2 Rinsate							

Area 3.1

	0-15cm	15-30 cm	Date
3.1.7.R.1	X		10-19-15
3.1.7.R.2		X	10-19-15
3.1.8.R.1	X		10-19-15
3.1.8.R.2		X	10-19-15

Survey Area 4.1

(4.1A, 4.1B, 4.1C, and 4.1D)

Survey and Sampling

Field Guide

1. INTRODUCTION AND PURPOSE

The purpose of this survey and sampling field guide (SSFG) is to:

- Present the survey and sampling parameters and objectives directly pertinent to Survey area 4.1 which includes sampling zones 4.1A, 4.1B, and 4.1C.
- Ensure all pertinent information and documentation is recorded.
- Guide the survey and sampling team through the survey and sampling process.

2. GENERAL DESCRIPTION OF THE SURVEY AREAS

Survey area 4.1 is located on the Seneca Nation of Indians in proximity to Cattaraugus Creek (Nominally South of 1061 4 Mile Level Road). The survey area is wooded. Figure 1 shows the general area of the Survey Area 4. The shaded polygon delineates the areas to be GPS surveyed, *while* the irregular shapes represent the primary areas to be sampled. If elevated areas are detected by the GPS survey that are outside of the existing sampling zones, samples may be collected at these elevated areas as well. Figure 2 is a satellite photo which provides a closer view of areas 4.1, 4.2, and 4.3. Figure 3 shows some pre-selected sampling points within Area 4.1. Table 1 provides the GPS coordinates for the Area GPS Survey Polygon.

Figure 2

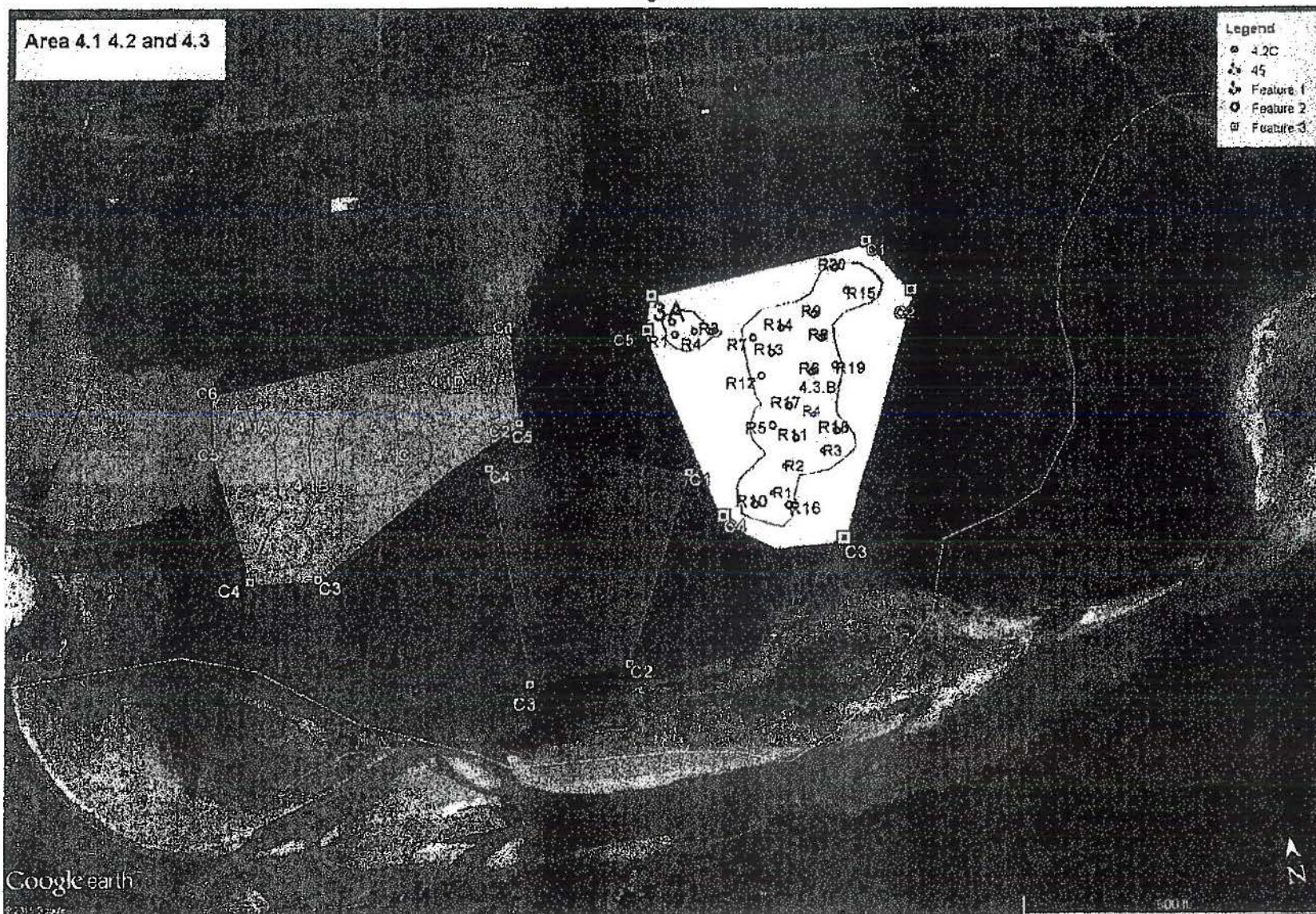


Figure 3

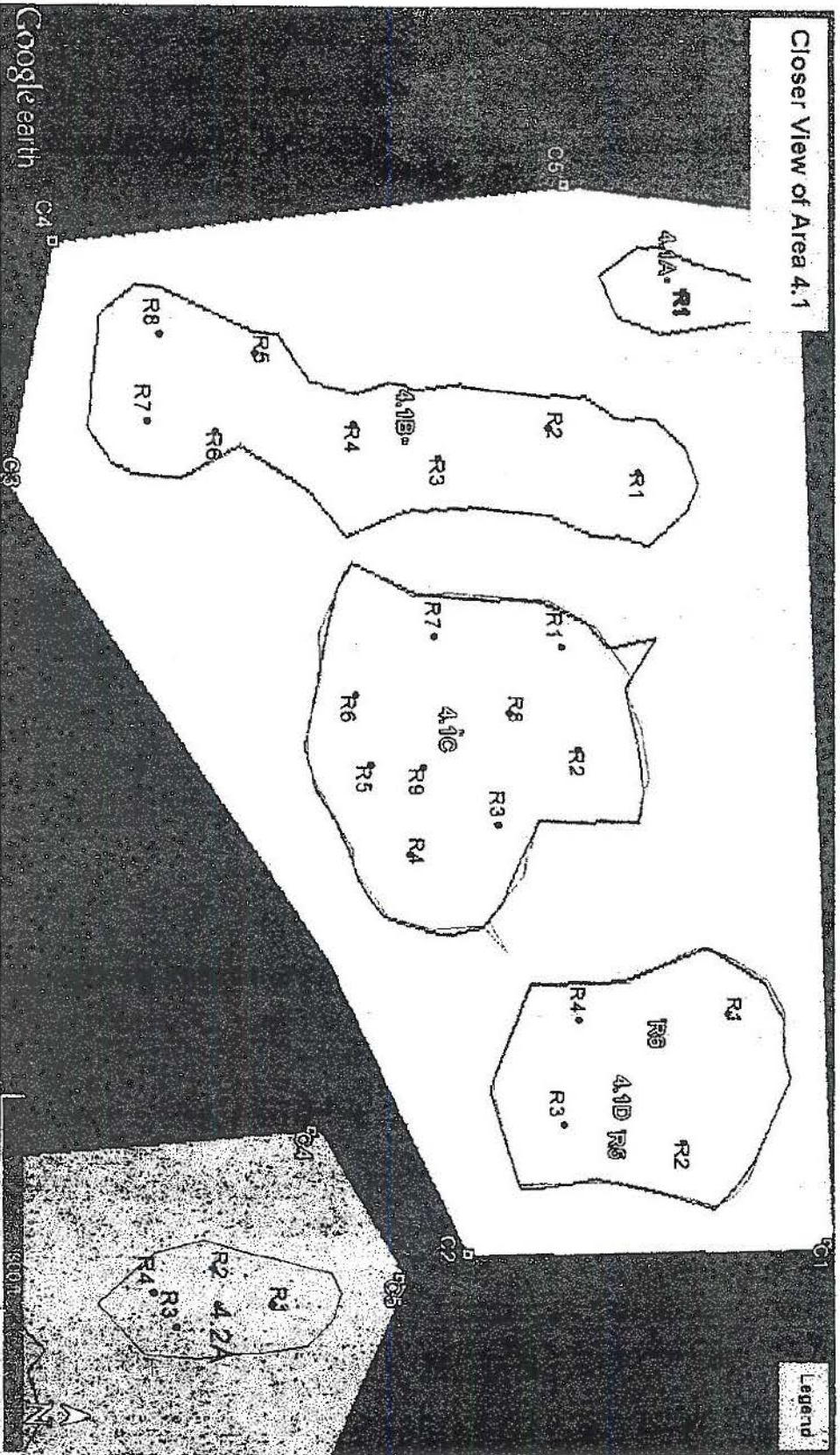


Figure 3

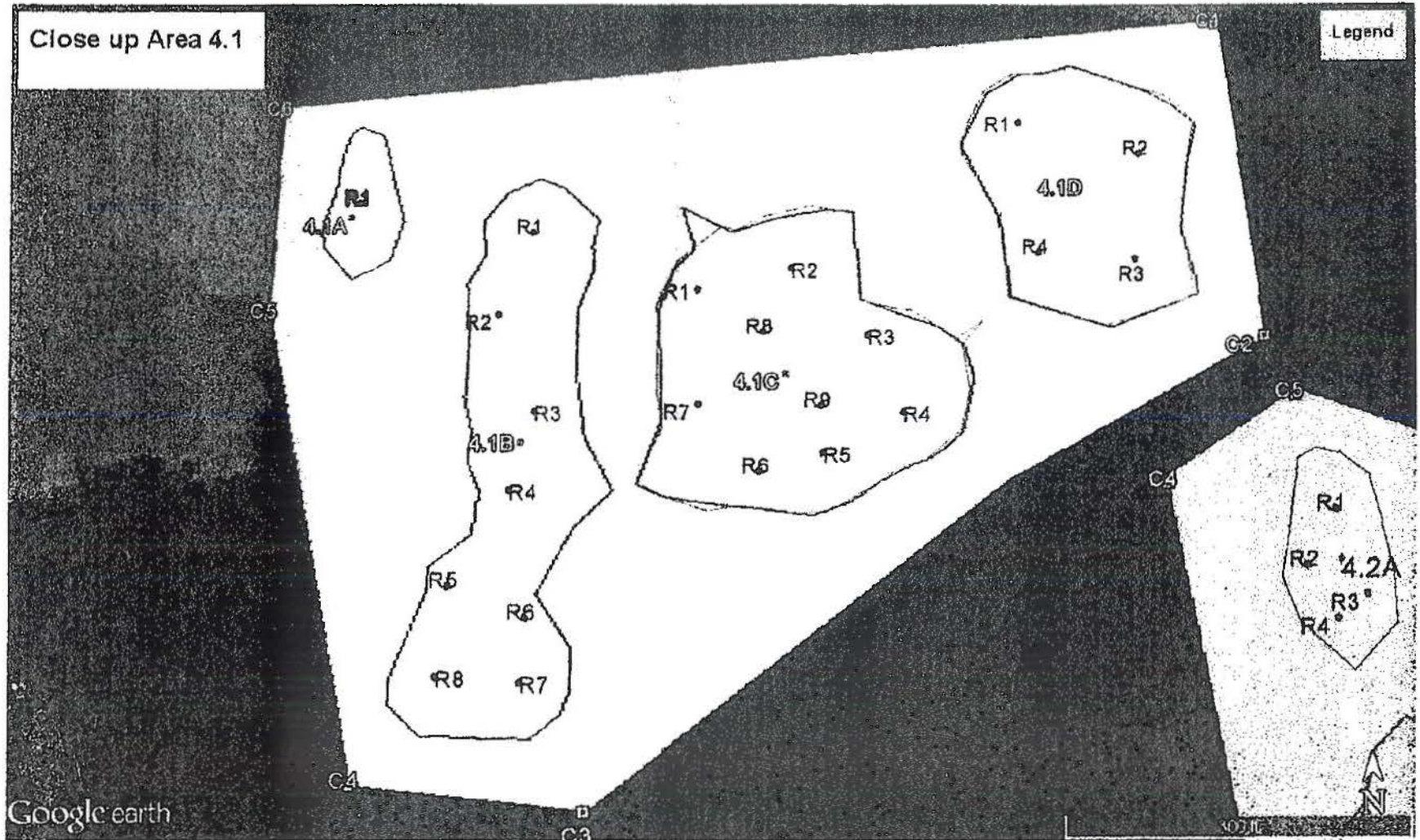


TABLE 1

GPS SURVEY AREA POLYGON CORNERS

Area 4.1

Corner	Latitude	Longitude
C1	79° 2'35.61"W	79° 2'35.61"W
C2	42°32'26.31"N	79° 2'35.61"W
C3	42°32'22.02"N	79° 2'44.52"W
C4	42°32'22.28"N	79° 2'47.28"W
C5	42°32'26.68"N	79° 2'48.83"W
C6	42°32'28.92"N	79° 2'48.91"W

3. STEP ONE - GPS SURVEY OPERATIONS (Initial as Performed)

Conduct Tailgate Safety Review.....	AB 12/7/15	AB 12/8/15	AB 12/9/15	_____
	(date)	(date)	(date)	(date)
Review survey parameters.....	AB 12/7/15	AB 12/8/15	AB 12/9/15	_____
	(date)	(date)	(date)	(date)
Verify all required tools, supplies, and equipment available.....	AB 12/7/15	AB 12/8/15	AB 12/9/15	_____
	(date)	(date)	(date)	(date)
Establish and Mark Boundaries of the GPS Survey Area Polygon.....	AB 12/7/15	AB 12/8/15	AB 12/9/15	_____
	(date)	(date)	(date)	(date)
Assemble and test GPS survey equipment.....	AB 12/7/15	AB 12/8/15	AB 12/9/15	_____
	(date)	(date)	(date)	(date)

Perform Operability Checks..... 13 12/7/15 13 12/8/15 13 12/9/15 _____
(date) (date) (date) (date)

Evaluate terrain and field conditions and select orientation of survey lines..... 13 12/7/15 13 12/8/15 13 12/9/15 _____
(date) (date) (date) (date)

Establish survey lines with nominal 30 meter spacing..... 13 12/7/15 13 12/8/15 13 12/9/15 _____
(date) (date) (date) (date)

Conduct Survey operations using best available technology (See Note 1 Below)..... 13 12/7/15 13 12/8/15 13 12/9/15 _____
(date) (date) (date) (date)

Verify all documentation complete..... N/A N/A 13 12/7/15 _____
(date) (date) (date) (date)

Debrief..... N/A N/A 13 12/9/15 _____
(date) (date) (date) (date)

Note 1:

- If possible use automated GPS data acquisition. Walk the designated lines at the ordinary pace
- If satellite signal for the Trimble GPS unit is inadequate, use the Garmin GPS unit or Cell Tower positioning to manually record GPS position and Count rates, at 5 meter intervals, along the designated lines (in accordance with established grid system).
- Alternatively establish grid lines using local coordinates system.
- If all GPS location methods are inadequate, manually log readings using measured lines at five meter intervals along the designated lines.

4. STEP TWO- STATIC RADIATION MEASUREMENTS and SOIL SAMPLING (Initial as Performed)

Conduct Tailgate Safety Review.....	<u>12/8/15</u> <u>dB</u>	<u>12/9/15</u> <u>dB</u>	<u>12/10/15</u> <u>dB</u>	_____
	(date)	(date)	(date)	(date)
Review sampling parameters	<u>12/8/15</u> <u>dB</u>	<u>12/9/15</u> <u>dB</u>	<u>12/10/15</u> <u>dB</u>	_____
	(date)	(date)	(date)	(date)
Verify all required tools, supplies, and equipment available	<u>12/8/15</u> <u>dB</u>	<u>12/9/15</u> <u>dB</u>	<u>12/10/15</u> <u>dB</u>	_____
	(date)	(date)	(date)	(date)
Prepare radiological instruments for use and perform operability checks.....	<u>12/8/15</u> <u>dB</u>	<u>12/9/15</u> <u>dB</u>	<u>12/10/15</u> <u>dB</u>	_____

	(date)	(date)	(date)	(date)
Collect Digital image(s) including location sign.....	<u>12/8/15 JBS</u>	<u>12/9/15 JBS</u>	<u>12/10/15 JBS</u>	_____
	(date)	(date)	(date)	(date)
Collect static radiation readings in accordance with procedure.....	<u>12/8/15 JBS</u>	<u>12/9/15 JBS</u>	<u>12/10/15 JBS</u>	_____
	(date)	(date)	(date)	(date)
Document relevant terrain, location, and other relevant physical features.....	<u>12/8/15 JBS</u>	<u>12/9/15 JBS</u>	<u>12/10/15 JBS</u>	_____
	(date)	(date)	(date)	(date)
Collect samples in accordance with procedure and sampling parameters	<u>12/8/15 JBS</u>	<u>12/9/15 JBS</u>	<u>12/10/15 JBS</u>	_____
	(date)	(date)	(date)	(date)
Document relevant sample features such as clay, sandy, different colors etc.	<u>12/8/15 JBS</u>	<u>12/9/15 JBS</u>	<u>12/10/15 JBS</u>	_____
	(date)	(date)	(date)	(date)
Verify all required samples have been collected and documentation is complete	<u>12/8/15 JBS</u>	<u>12/9/15 JBS</u>	<u>12/10/15 JBS</u>	_____
	(date)	(date)	(date)	(date)
Pack samples and equipment for transport back to vehicle(s).....	<u>12/8/15 JBS</u>	<u>12/9/15 JBS</u>	<u>12/10/15 JBS</u>	_____

	(date)	(date)	(date)	(date)
Transport samples and equipment to Bulk Storage Warehouse.....	<u>12/8/15 TB</u>	<u>12/9/15 TB</u>	<u>12/10/15 TB</u>	_____
	(date)	(date)	(date)	(date)
Collect rinsate sample after final cleaning of the tools.....	<u>12/8/15 TB</u>	<u>12/9/15 TB</u>	<u>12/10/15 TB</u>	_____
	(date)	(date)	(date)	(date)

6. COMMUNICATION PLAN

It is anticipated that there will be cellular service in the survey areas, and since these areas are not remote, no special communication requirements apply other than periodic accountability checks.

7. RELEVANT PROCEDURES AND DOCUMENTS

- RCP-02 Rev. 2, 6/1/2014 Instrument Operating Procedure Bicon MicroRem Meter
- RCP-01 Instrument Operating Procedure Ludlum 2241-2 Ratemeter/Scaler Coupled With the Ludlum 44-9 Geiger-Mueller (GM) and 44-10 2x2 NaI Detectors
 - Project Quality Assurance Project Plan (QAPP)
- NYSERDA Environmental Survey Project Procedure 1 : Soil Sample Collection and Radiological Survey Procedure
- Project Health and Safety Plan (HASP)

- RCP-03 Rev 3. 9/15/15 Performing a GPS Enhanced Overland Gamma Radiation Survey Including the Preparation and Assessment of Radiological and Geographical Data

8. Attachments and other Documents:

- Maps (including topo and satellite – larger scale)
- Sampling Specifications Sheets
- Sample collection forms
- Chain of Custody Forms
- Logbooks

4.1B

Date Collected	Sample	Elevation				Coordinates	
		0-15 cm	15-30 cm	30-60 cm	60-100c cm		
12-10-15	4.1B R 1 . 1	X				42°32'27.53"N	79° 2'45.36"W
12-10-15	4.1B R 1 . 2		X				
12-10-15	4.1B R 1 . 3			X			
12-10-15	4.1B R 1 . 4				X		
12-10-15	4.1B R 2 . 1	X				42°32'26.66"N	79° 2'45.78"W
12-10-15	4.1B R 2 . 2		X				
12-10-15	4.1B R 2 . 3			X			
12-10-15	4.1B R 2 . 4				X		
12-10-15	4.1B R 2 . 5			X			
12-10-15	4.1B R 2 . 6				X		
12-8-15	4.1B R 3 . 1	X				42°32'25.66"N	79° 2'45.27"W
12-8-15	4.1B R 3 . 2		X				
12-8-15	4.1B R 4 . 1	X				42°32'24.89"N	79° 2'45.56"W
12-8-15	4.1B R 4 . 2		X				
12-8-15	4.1B R 5 . 1	X				42°32'24.00"N	79° 2'46.27"W
12-8-15	4.1B R 5 . 2		X				
12-8-15	4.1B R 6 . 1	X				42°32'23.70"N	79° 2'45.30"W
12-8-15	4.1B R 6 . 2		X				
12-9-15	4.1B R 7 . 1	X				42°32'23.13"N	79° 2'45.34"W
12-9-15	4.1B R 7 . 2		X				
12-9-15	4.1B R 8 . 1	X				42°32'23.19"N	79° 2'46.36"W
12-9-15	4.1B R 8 . 2		X				

4.1B

Date Collected	Sample	Elevation				Coordinates	
		0-15 cm	15-30 cm	30-60 cm	60-100c cm		
12/10/15	4.1B R 1 . 1	X				42°32'27.53"N	79° 2'45.36"W
12/10/15	4.1B R 1 . 2		X				
12/10/15	4.1B R 1 . 3			X			
12/10/15	4.1B R 1 . 4				X		
12/10/15	4.1B R 2 . 1	X				42°32'26.66"N	79° 2'45.78"W
12/10/15	4.1B R 2 . 2		X				
12/10/15	4.1B R 2 . 3			X			
12/10/15	4.1B R 2 . 4				X		
12/10/15	4.1B R 2 . 5			X			
12/10/15	4.1B R 2 . 6				X		
12/8/15	4.1B R 3 . 1	X				42°32'25.66"N	79° 2'45.27"W
12/8/15	4.1B R 3 . 2		X				
12/8/15	4.1B R 4 . 1	X				42°32'24.89"N	79° 2'45.56"W
12/8/15	4.1B R 4 . 2		X				
12/8/15	4.1B R 5 . 1	X				42°32'24.00"N	79° 2'46.27"W
12/8/15	4.1B R 5 . 2		X				
12/8/15	4.1B R 6 . 1	X				42°32'23.70"N	79° 2'45.30"W
12/8/15	4.1B R 6 . 2		X				
12/9/15	4.1B R 7 . 1	X				42°32'23.13"N	79° 2'45.34"W
12/9/15	4.1B R 7 . 2		X				
12/9/15	4.1B R 8 . 1	X				42°32'23.19"N	79° 2'46.36"W
12/9/15	4.1B R 8 . 2		X				

4.1C

Date Collected	Sample	Elevation				Coordinates	
		0-15 cm	15-30 cm	30-60 cm	60-100c cm		
12-10-15	4.1C R 1 . 1	X				42°32'26.89"N	79° 2'43.11"W
12-10-15	4.1C R 1 . 2		X				
12-10-15	4.1C R 1 . 3			X			
12-10-15	4.1C R 1 . 4				X		
12-10-15	4.1C R 2 . 1	X				42°32'27.10"N	79° 2'41.85"W
12-10-15	4.1C R 2 . 2		X				
12-10-15	4.1C R 2 . 3			X			
12-10-15	4.1C R 2 . 4				X		
12-9-15	4.1C R 3 . 1	X				42°32'26.39"N	79° 2'40.86"W
12-9-15	4.1C R 3 . 2		X				
12-9-15	4.1C R 3 . 5		X				
12-9-15	4.1C R 4 . 1	X				42°32'25.60"N	79° 2'40.45"W
12-9-15	4.1C R 4 . 2		X				
12-9-15	4.1C R 5 . 1	X				42°32'25.21"N	79° 2'41.52"W
12-9-15	4.1C R 5 . 2		X				
12-9-15	4.1C R 6 . 1	X				42°32'25.04"N	79° 2'42.35"W
12-9-15	4.1C R 6 . 2		X				
12-9-15	4.1C R 7 . 1	X				42°32'25.71"N	79° 2'43.12"W
12-9-15	4.1C R 7 . 2		X				
12-9-15	4.1C R 8 . 1	X				42°32'26.44"N	79° 2'42.25"W
12-9-15	4.1C R 8 . 2		X				
12-9-15	4.1C R 9 . 1	X				42°32'25.68"N	79° 2'41.52"W
12-9-15	4.1C R 9 . 2		X				
12-9-15	4.1C R 9 . 5	X					

4.1C

Date Collected	Sample	Elevation				Coordinates	
		0-15 cm	15-30 cm	30-60 cm	60-100c cm		
12/10/15	4.1C R 1 . 1	X				42°32'26.89"N	79° 2'43.11"W
12/10/15	4.1C R 1 . 2		X				
12/10/15	4.1C R 1 . 3			X			
12/10/15	4.1C R 1 . 4				X		
12/10/15	4.1C R 2 . 1	X				42°32'27.10"N	79° 2'41.85"W
12/10/15	4.1C R 2 . 2		X				
12/10/15	4.1C R 2 . 3			X			
12/10/15	4.1C R 2 . 4				X		
12/9/15	4.1C R 3 . 1	X				42°32'26.39"N	79° 2'40.86"W
12-9-15	4.1C R 3 . 2		X				
12-9-15	4.1C R 3 . 5		X				
12-9-15	4.1C R 4 . 1	X				42°32'25.60"N	79° 2'40.45"W
12-9-15	4.1C R 4 . 2		X				
12-9-15	4.1C R 5 . 1	X				42°32'25.21"N	79° 2'41.52"W
12-9-15	4.1C R 5 . 2		X				
12-9-15	4.1C R 6 . 1	X				42°32'25.04"N	79° 2'42.35"W
12-9-15	4.1C R 6 . 2		X				
12/9/15	4.1C R 7 . 1	X				42°32'25.71"N	79° 2'43.12"W
12/9/15	4.1C R 7 . 2		X				
12-9-15	4.1C R 8 . 1	X				42°32'26.44"N	79° 2'42.25"W
12-9-15	4.1C R 8 . 2		X				
12-9-15	4.1C R 9 . 1	X				42°32'25.68"N	79° 2'41.52"W
12-9-15	4.1C R 9 . 2		X				
12-9-15	4.1C R 9 . 5	X					
12-9-15							

4.1D

Date Collected	Sample	Elevation				Coordinates	
		0-15 cm	15-30 cm	30-60 cm	60-100c cm		
12-10-15	4.1D R 1 . 1	X				42°32'28.69"N	79° 2'38.58"W
12-10-15	4.1D R 1 . 2		X				
12-10-15	4.1D R 1 . 3			X			
12-10-15	4.1D R 1 . 4				X		
12-10-15	4.1D R 2 . 1	X				42°32'28.31"N	79° 2'36.95"W
12-10-15	4.1D R 2 . 2		X				
12-10-15	4.1D R 2 . 3			X			
12-10-15	4.1D R 2 . 4				X		
12-10-15	4.1D R 2 . 5		X				
12-9-15	4.1D R 3 . 1	X				42°32'27.15"N	79° 2'37.19"W
12-9-15	4.1D R 3 . 2		X				
12-9-15	4.1D R 4 . 1	X				42°32'27.24"N	79° 2'38.48"W
12-9-15	4.1D R 4 . 2		X				
12-9-15	4.1D R 4 . 5	X					
12-9-15	4.1D R 5 1	X				42°32'27.73"N	79° 2'37.09"W
12-9-15	4.1D R 5 2		X				
12-9-15	4.1D R 6 1	X				42°32'28.06"N	79° 2'38.48"W
12-9-15	4.1D R 6 2		X				

4.1D

Date Collected	Sample	Elevation				Coordinates	
		0-15 cm	15-30 cm	30-60 cm	60-100c cm		
12/10/15	4.1D R 1 . 1	X				42°32'28.69"N	79° 2'38.58"W
12/10/15	4.1D R 1 . 2		X				
12/10/15	4.1D R 1 . 3			X			
12/10/15	4.1D R 1 . 4				X		
12/10/15	4.1D R 2 . 1	X				42°32'28.31"N	79° 2'36.95"W
12/10/15	4.1D R 2 . 2		X				
12/10/15	4.1D R 2 . 3			X			
12/10/15	4.1D R 2 . 4				X		
12/10/15	4.1D R 2 . 5		X				
12-9-15	4.1D R 3 . 1	X				42°32'27.15"N	79° 2'37.19"W
12-9-15	4.1D R 3 . 2		X				
12-9-15	4.1D R 4 . 1	X				42°32'27.24"N	79° 2'38.48"W
12-9-15	4.1D R 4 . 2		X				
12-9-15	4.1D R 4 . 5	X					
12-9-15	4.1D R 5 1	X				42°32'27.73"N	79° 2'37.09"W
12-9-15	4.1D R 5 2		X				
12-9-15	4.1D R 6 1	X				42°32'28.06"N	79° 2'38.48"W
12-9-15	4.1D R 6 2		X				

The MJW Companies

GPS Field Survey Checklist

The following field survey checklist is used once the survey team has walked to the location that they will begin a GPS survey. This checklist is intended to verify none of the cables or settings changed or cables came loose between the initial setup location and the field survey location. Complete step 9 once the current walkover segment is complete.

1. AB Verify the Ludlum Meter is in Rate mode
2. AB Verify that the Ludlum Meter is alternating display of "DUP" and "Value"
3. AB Set Menu 1 to "Status" and Menu 2 to "Receiver"
4. AB Verify that Antenna states "External"
5. AB Set Menu 1 to "Data"
6. AB Name a file to start the current survey and start the data logger

Filename: 12 7 15 4.1 a

7. AB Set Menu 1 to "Status" and Menu 2 to "Sensor"
8. AB Verify that the sensor field is reading the same as the display on the Ludlum
9. AB When finished, set Menu 1 to "Data" and close the current file.

Name: Julie H. Ben Date: 12/2/15

The MJW Companies
GPS Initial Setup Checklist

1. Complete source check of Ludlum Meter
2. Power off Ludlum Meter
3. Verify Trimble is shutdown (not in suspend mode)
4. Connect the Serial interface Adapter (SIA) to the Trimble Unit
5. Connect the Serial cable to the Ludlum Meter
6. Connect the Serial cable to the Trimble SIA
7. Connect external GPS antenna cable to the Trimble
8. Power on Ludlum Meter to Rate mode
9. Verify that the Ludlum Meter is alternating display of "DUP" and "Value"
10. Power on the Trimble and wait for it to completely boot
11. Launch TerraSync and wait for it to load and acquire satellites
12. Set Menu 1 to "Status" and Menu 2 to "Receiver"
13. Verify that Antenna states "External"
14. Set Menu 1 to "Data"
15. Name a test file and start the data logger
16. Set Menu 1 to "Status" and Menu 2 to "Sensor"
17. Verify that the sensor field is reading the same as the display on the Ludlum
18. Set Menu 1 to "Data" and close the current file.

Name:



Date:

12/7/15

The MJW Companies
GPS Field Survey Checklist

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Name: Julie H Ben Date: 12/8/15

The MJW Companies

GPS Initial Setup Checklist

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17. Verify that the sensor field is reading the same as the display on the Ludlum
18. Set Menu 1 to "Data" and close the current file.

Name: _____

[Handwritten Signature]

Date: _____

12/8/15

The MJW Companies

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Filename: 12 9 15 4-1 C

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Name: Julie Br Date: 12/9/15

The MJW Companies

GPS Initial Setup Checklist

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Name:



Date:

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The MJW Companies
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5. 4/13 Set Menu 1 to "Data"
6. 4/13 Name a file to start the current survey and start the data logger

Filename: 12 7 15 4.1 a

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Name: Julie H. Ben Date: 12/2/15

The MJW Companies
GPS Initial Setup Checklist

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14. Set Menu 1 to "Data"
15. Name a test file and start the data logger
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17. Verify that the sensor field is reading the same as the display on the Ludlum
18. Set Menu 1 to "Data" and close the current file.

Name: _____

[Handwritten Signature]

Date: _____

12/8/15

The MJW Companies
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3. AB Set Menu 1 to "Status" and Menu 2 to "Receiver"
4. AB Verify that Antenna states "External"
5. AB Set Menu 1 to "Data"
6. AB Name a file to start the current survey and start the data logger

Filename: 12 9 15 4-12

7. AB Set Menu 1 to "Status" and Menu 2 to "Sensor"
8. AB Verify that the sensor field is reading the same as the display on the Ludlum
9. AB When finished, set Menu 1 to "Data" and close the current file.

Name: Julie Ben Date: 12/9/15

The MJW Companies

GPS Initial Setup Checklist

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17. Verify that the sensor field is reading the same as the display on the Ludlum
18. Set Menu 1 to "Data" and close the current file.

Name: _____



Date: _____



Survey Area 4.2

(4.2A, 4.2B and 4.2C)

Survey and Sampling

Field Guide

1. INTRODUCTION AND PURPOSE

The purpose of this survey and sampling field guide (SSFG) is to:

- Present the survey and sampling parameters and objectives directly pertinent to Survey area 4.2 which includes sampling zones 4.2A, 4.2B, and 4.2C.
- Ensure all pertinent information and documentation is recorded.
- Guide the survey and sampling team through the survey and sampling process.

2. GENERAL DESCRIPTION OF THE SURVEY AREAS

Survey area 4.2 is located on the Seneca Nation of Indians in proximity to Cattaraugus Creek (Nominally South of 1061 4 Mile Level Road). The Northernmost Corner (C-4) lies nominally 1400 feet South of 4 Mile Level Road. The survey area is wooded. Figure 1 shows the general area of the Survey Area 4. The shaded polygon delineates the areas to be GPS surveyed, while the irregular shapes represent the primary areas to be sampled. If elevated areas are detected by the GPS survey that are outside of the existing sampling zones, samples may be collected at these elevated areas as well. Figure 2 is a satellite photo which provides a closer view of areas 4.1, 4.2, and 4.3. Figure 3 shows some pre-selected sampling points within Area 4.3. Table 1 provides the GPS coordinates for the Area 4.2 GPS Survey Polygon.

Figure 2

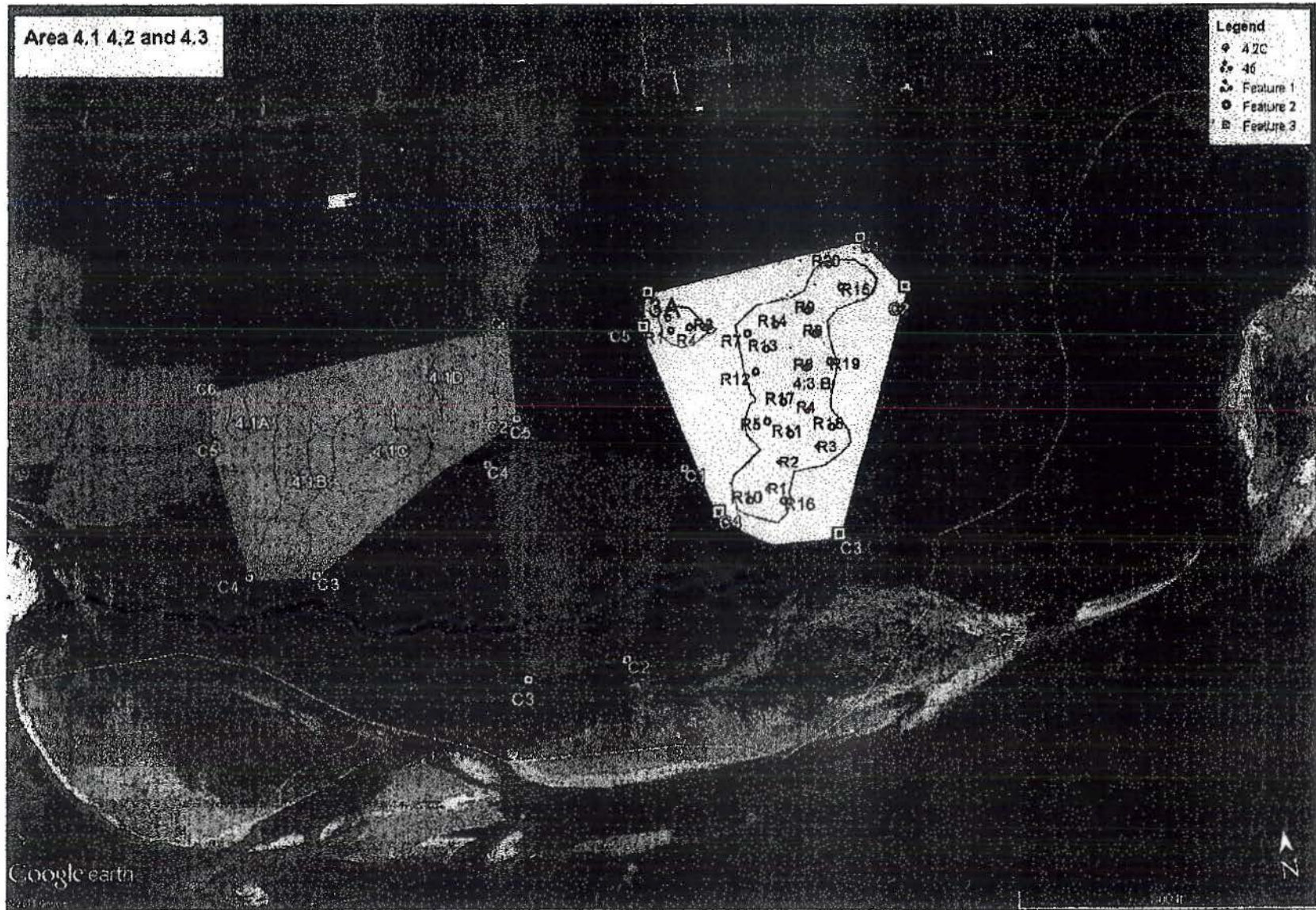


TABLE 1

GPS SURVEY AREA POLYGON CORNERS

Area 4.2

Corner	Latitude	Longitude
C1	42°32'23.69"N	79° 2'28.58"W
C2	42°32'17.94"N	79° 2'32.32"W
C3	42°32'17.81"N	79° 2'36.38"W
C4	42°32'24.85"N	79° 2'37.13"W
C5	42°32'25.70"N	79° 2'35.34"W

3. STEP ONE - GPS SURVEY OPERATIONS (Initial as Performed)

Conduct Tailgate Safety Review.....	<u>TB 12/8</u>	_____	_____	_____
	(date)	(date)	(date)	(date)
Review survey parameters.....	<u>TB 12/8</u>	_____	_____	_____
	(date)	(date)	(date)	(date)
Verify all required tools, supplies, and equipment available.....	<u>TB 12/8</u>	_____	_____	_____
	(date)	(date)	(date)	(date)
Establish and Mark Boundaries of the GPS Survey Area Polygon.....	<u>TB 12/8</u>	_____	_____	_____
	(date)	(date)	(date)	(date)
Assemble and test GPS survey equipment.....	<u>TB 12/8</u>	_____	_____	_____
	(date)	(date)	(date)	(date)

Perform Operability Checks.....	<u>TB 12/8</u>	_____	_____	_____
	(date)	(date)	(date)	(date)
Evaluate terrain and field conditions and select orientation of survey lines.....	<u>TB 12/8</u>	_____	_____	_____
	(date)	(date)	(date)	(date)
Establish survey lines with nominal 30 meter spacing.....	<u>TB 12/8</u>	_____	_____	_____
	(date)	(date)	(date)	(date)
Conduct Survey operations using best available technology (See Note 1 Below).....	<u>TB 12/8</u>	_____	_____	_____
	(date)	(date)	(date)	(date)
Verify all documentation complete.....	<u>TB 12/8</u>	_____	_____	_____
	(date)	(date)	(date)	(date)
Debrief.....	<u>TB 12/8</u>	_____	_____	_____
	(date)	(date)	(date)	(date)

Note 1:

- If possible use automated GPS data acquisition. Walk the designated lines at the ordinary pace
- If satellite signal for the Trimble GPS unit is inadequate, use the Garmin GPS unit or Cell Tower positioning to manually record GPS position and Count rates, at 5 meter intervals, along the designated lines (in accordance with established grid system).
- Alternatively establish grid lines using local coordinates system.
- If all GPS location methods are inadequate, manually log readings using measured lines at five meter intervals along the designated lines.

4. STEP TWO- STATIC RADIATION MEASUREMENTS and SOIL SAMPLING (Initial as Performed)

Conduct Tailgate Safety Review.....	<u>TB 12/8</u>	_____	_____	_____
	(date)	(date)	(date)	(date)
Review sampling parameters	<u>TB 12/8</u>	_____	_____	_____
	(date)	(date)	(date)	(date)
Verify all required tools, supplies, and equipment available	<u>TB 12/8</u>	_____	_____	_____
	(date)	(date)	(date)	(date)
Prepare radiological instruments for use and perform operability checks.....	<u>TB 12/8</u>	_____	_____	_____

	(date)	(date)	(date)	(date)
Collect Digital image(s) including location sign.....	TB 12/8	_____	_____	_____
	(date)	(date)	(date)	(date)
Collect static radiation readings in accordance with procedure.....	TB 12/8	_____	_____	_____
	(date)	(date)	(date)	(date)
Document relevant terrain, location, and other relevant physical features.....	TB 12/8	_____	_____	_____
	(date)	(date)	(date)	(date)
Collect samples in accordance with procedure and sampling parameters	TB 12/8	_____	_____	_____
	(date)	(date)	(date)	(date)
Document relevant sample features such as clay, sandy, different colors etc.	TB 12/8	_____	_____	_____
	(date)	(date)	(date)	(date)
Verify all required samples have been collected and documentation is complete	TB 12/8	_____	_____	_____
	(date)	(date)	(date)	(date)
Pack samples and equipment for transport back to vehicle(s).....	TB 12/8	_____	_____	_____

	(date)	(date)	(date)	(date)
Transport samples and equipment to Bulk Storage Warehouse.....	<u>TB 12/8</u>	_____	_____	_____
	(date)	(date)	(date)	(date)
Collect rinsate sample after final cleaning of the tools.....	<u>TB 12/8</u>	_____	_____	_____
	(date)	(date)	(date)	(date)

6. COMMUNICATION PLAN

It is anticipated that there will be cellular service in the survey areas, and since these areas are not remote, no special communication requirements apply other than periodic accountability checks.

7. RELEVANT PROCEDURES AND DOCUMENTS

- RCP-02 Rev. 2, 6/1/2014 Instrument Operating Procedure Bicon MicroRem Meter
- RCP-01 Instrument Operating Procedure Ludlum 2241-2 Ratemeter/Scaler Coupled With the Ludlum 44-9 Geiger-Mueller (GM) and 44-10 2x2 NaI Detectors
 - Project Quality Assurance Project Plan (QAPP)
- NYSERDA Environmental Survey Project Procedure 1 : Soil Sample Collection and Radiological Survey Procedure
- Project Health and Safety Plan (HASP)

- RCP-03 Rev 3. 9/15/15 Performing a GPS Enhanced Overland Gamma Radiation Survey including the Preparation and Assessment of Radiological and Geographical Data

8. Attachments and other Documents:

- Maps (including topo and satellite – larger scale)
- Sampling Specifications Sheets
- Sample collection forms
- Chain of Custody Forms
- Logbooks

AREA 4.2B

Date Collected	Sample	Elevation				Coordinates	
		0-15 cm	15-30 cm	30-60 cm	60-100c cm		
12-8-15	4.2B R 1 . 1	X				42°32'21.92"N	79° 2'34.65"W
12-8-15	4.2B R 1 . 2		X				
12-8-15	4.2B R 1 . 3			X			
12-8-15	4.2B R 1 . 4				X		
12-8-15	4.2B R 2 . 1	X				42°32'21.21"N	79° 2'35.30"W
12-8-15	4.2B R 2 . 2		X				
12-8-15	4.2B R 2 . 3			X			
12-8-15	4.2B R 2 . 4				X		
12-8-15	4.2B R 3 . 1	X				42°32'19.92"N	79° 2'35.31"W
12-8-15	4.2B R 3 . 2		X				
12-8-15	4.2B R 3 . 3			X			
12-8-15	4.2B R 3 . 4				X		
12-8-15	4.2B R 3 . 5			X			
12-8-15	4.2B R 3 . 6				X		
12/7/15	4.2B R 4 . 1	X				42°32'19.15"N	79° 2'34.92"W
12/7/15	4.2B R 4 . 2		X				
12/7/15	4.2B R 5 . 1	X				42°32'18.84"N	79° 2'34.10"W
12/7/15	4.2B R 5 . 2		X				
12/7/15	4.2B R 6 . 1	X				42°32'19.25"N	79° 2'33.32"W
12/7/15	4.2B R 6 . 2		X				
12/7/15	4.2B R 7 . 1	X				42°32'19.77"N	79° 2'34.11"W
12/7/15	4.2B R 7 . 2		X				
12/7/15	4.2B R 8 . 1	X				42°32'20.10"N	79° 2'33.17"W
12/7/15	4.2B R 8 . 2		X				

AREA 4.2 B Cont.

Date Collected	Sample				Elevation				Coordinates	
					0-15 cm	15-30 cm	30-60 cm	60-100c cm		
12-3-15	4.2B	R	9	1	X				42°32'21.06"N	79° 2'32.83"W
12-3-15	4.2B	R	9	2		X				
12-2-15	4.2B	R	10	1	X				42°32'21.92"N	79° 2'33.01"W
12-2-15	4.2B	R	10	2		X				
12-2-15	4.2B	R	11	1	X				42°32'22.27"N	79° 2'33.84"W
12-2-15	4.2B	R	11	2		X				
12-2-15	4.2B	R	12	1	X				42°32'21.35"N	79° 2'33.79"W
12-2-15	4.2B	R	12	2		X				
12-3-15	4.2B	R	13	1	X				42°32'21.10"N	79° 2'34.57"W
12-3-15	4.2B	R	13	2		X				
12-3-15	4.2B	R	14	1	X				42°32'20.33"N	79° 2'34.15"W
12-3-15	4.2B	R	14	2		X				
12-3-15	4.2B	R	15	1	X				42°32'20.62"N	79° 2'33.50"W
12-3-15	4.2B	R	15	2		X				
12-3-15	4.2B	R	16	1	X				42°32'20.33"N	79° 2'34.15"W
12-3-15	4.2B	R	16	2		X				
12-3-15	4.2B	R	17	1	X				42°32'19.61"N	79° 2'34.76"W
12-3-15	4.2B	R	17	2		X				
12-3-15	4.2B	R	18	1	X				42°32'19.37"N	79° 2'33.84"W
12-3-15	4.2B	R	18	2		X				
12-3-15	4.2B	R	18	5	X					
12-3-15	4.2B	R	18	6		X				

KB
12/2 42°32' 20.6"N 79° 0' 2' 34.9"W

The MJW Companies

GPS Initial Setup Checklist

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3. AB Verify Trimble is shutdown (not in suspend mode)
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9. AB Verify that the Ludlum Meter is alternating display of "DUP" and "Value"
10. AB Power on the Trimble and wait for it to completely boot
11. AB Launch TerraSync and wait for it to load and acquire satellites
12. AB Set Menu 1 to "Status" and Menu 2 to "Receiver"
13. AB Verify that Antenna states "External"
14. AB Set Menu 1 to "Data"
15. AB Name a test file and start the data logger
16. AB Set Menu 1 to "Status" and Menu 2 to "Sensor"
17. AB Verify that the sensor field is reading the same as the display on the Ludlum
18. AB Set Menu 1 to "Data" and close the current file.

Name: _____

Julie H. Poon

Date: _____

12/2/15 pm

GPS not completed in 4.2
due to hunters in area

The MJW Companies
GPS Field Survey Checklist

The following field survey checklist is used once the survey team has walked to the location that they will begin a GPS survey. This checklist is intended to verify none of the cables or settings changed or cables came loose between the initial setup location and the field survey location. Complete step 9 once the current walkover segment is complete.

1. JB Verify the Ludlum Meter is in Rate mode
2. JB Verify that the Ludlum Meter is alternating display of "DUP" and "Value"
3. JB Set Menu 1 to "Status" and Menu 2 to "Receiver"
4. JB Verify that Antenna states "External"
5. JB Set Menu 1 to "Data"
6. JB Name a file to start the current survey and start the data logger

Filename: 123 15 4-2 a

7. JB Set Menu 1 to "Status" and Menu 2 to "Sensor" ✓
8. JB Verify that the sensor field is reading the same as the display on the Ludlum
9. JB When finished, set Menu 1 to "Data" and close the current file.

Name: Julie H. Ben Date: 12/3/15

The MJW Companies

GPS Initial Setup Checklist

1. AB Complete source check of Ludlum Meter
2. AB Power off Ludlum Meter
3. AB Verify Trimble is shutdown (not in suspend mode)
4. AB Connect the Serial Interface Adapter (SIA) to the Trimble Unit
5. AB Connect the Serial cable to the Ludlum Meter
6. AB Connect the Serial cable to the Trimble SIA
7. AB Connect external GPS antenna cable to the Trimble
8. AB Power on Ludlum Meter to Rate mode
9. AB Verify that the Ludlum Meter is alternating display of "DUP" and "Value"
10. AB Power on the Trimble and wait for it to completely boot
11. AB Launch TerraSync and wait for it to load and acquire satellites
12. AB Set Menu 1 to "Status" and Menu 2 to "Receiver"
13. AB Verify that Antenna states "External"
14. AB Set Menu 1 to "Data"
15. AB Name a test file and start the data logger
16. AB Set Menu 1 to "Status" and Menu 2 to "Sensor"
17. AB Verify that the sensor field is reading the same as the display on the Ludlum
18. AB Set Menu 1 to "Data" and close the current file.

Name: _____

Julie H. Brun

Date: _____

12/3/15

Survey Area 4.3

(4.3a and 4.3b)

Survey and Sampling

Field Guide

1. INTRODUCTION AND PURPOSE

The purpose of this survey and sampling field guide (SSFG) is to:

- Present the survey and sampling parameters and objectives directly pertinent to Survey area 4.3 which includes sampling zones 4.3a and 4.3b.
- Ensure all pertinent information and documentation is recorded.
- Guide the survey and sampling team through the survey and sampling process.

2. GENERAL DESCRIPTION OF THE SURVEY AREAS

Survey area 4.3 is located on the Seneca Nation of Indians in proximity to Cattaraugus Creek (Nominally South of 1061 4 Mile Level Road). The centroid of sampling area 4.3b is approximately 415 meters South of 4 Mile Level Road. The survey area is wooded. Figure 1 shows the general area of the Survey Area 4. The shaded polygon delineates the areas to be GPS surveyed, while the irregular shapes represent the primary areas to be sampled. If elevated areas are detected by the GPS survey that are outside of the existing sampling zones, samples may be collected at these elevated areas as well. Figure 2 is a satellite photo which provides a closer view of areas 4.1, 4.2, and 4.3. Figure 3 shows some pre-selected sampling points within Area 4.3. Table 1 provides the GPS coordinates for the Area 4.3 GPS Survey Polygon.

Figure 1
General View of Area 4

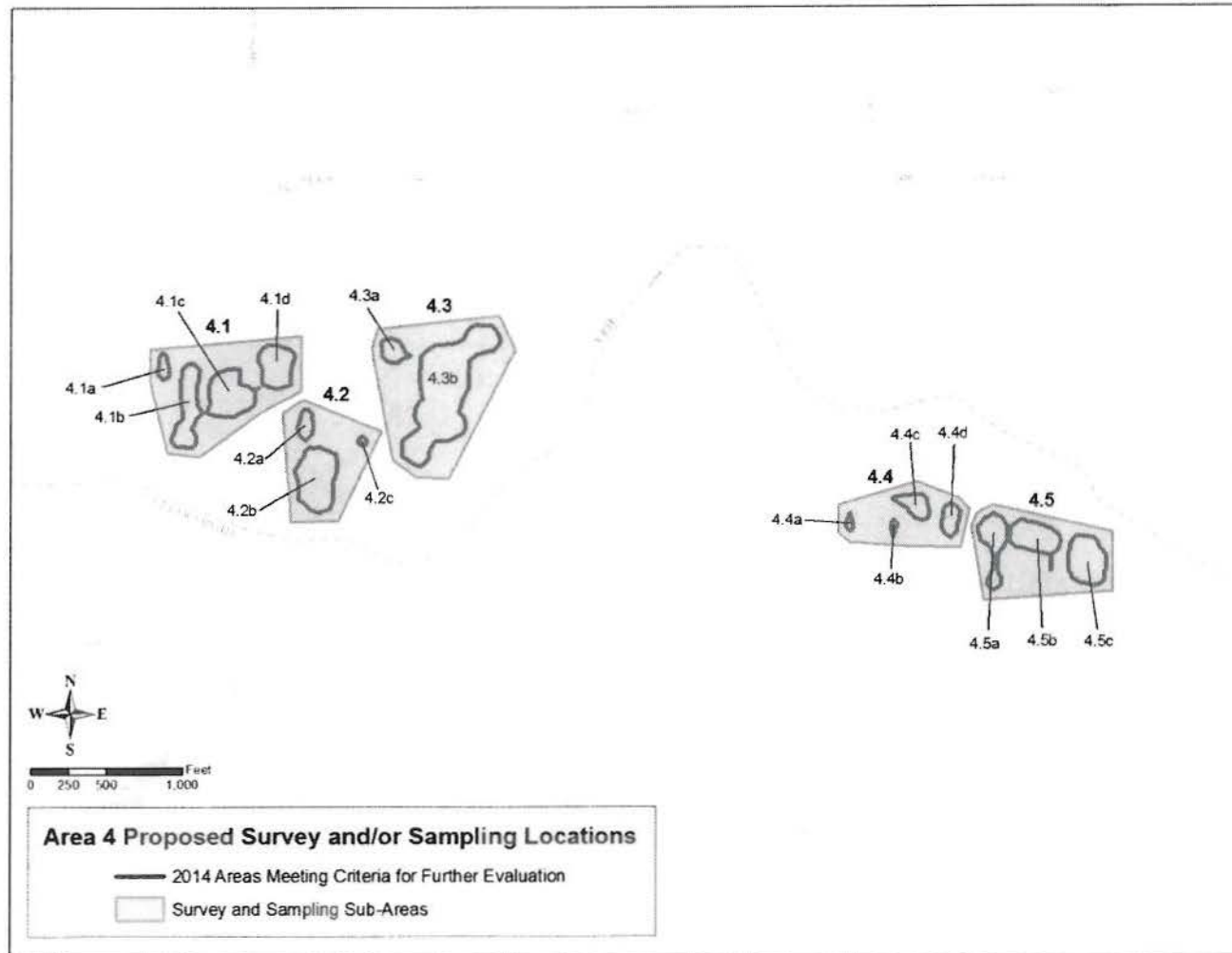
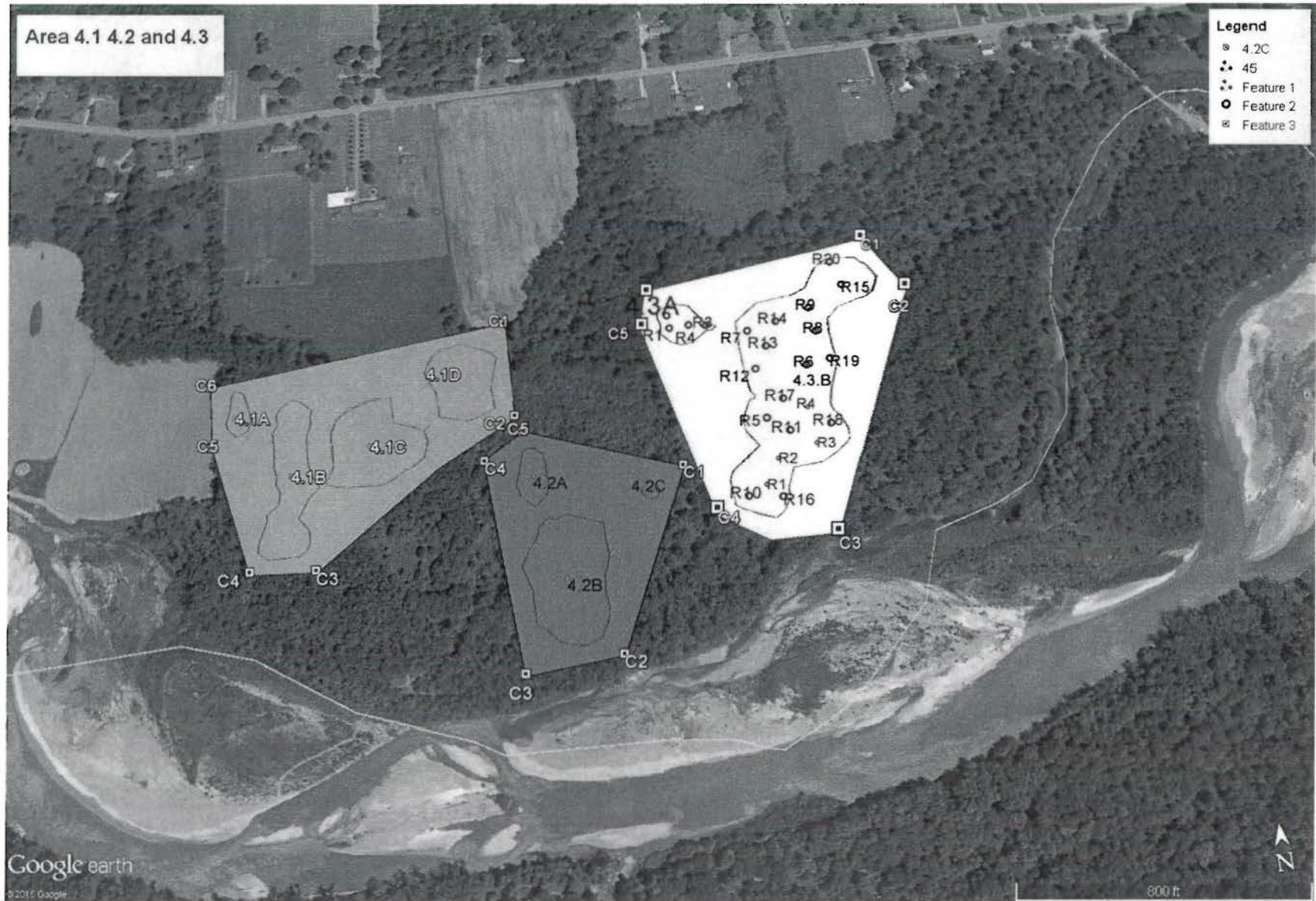


Figure 2



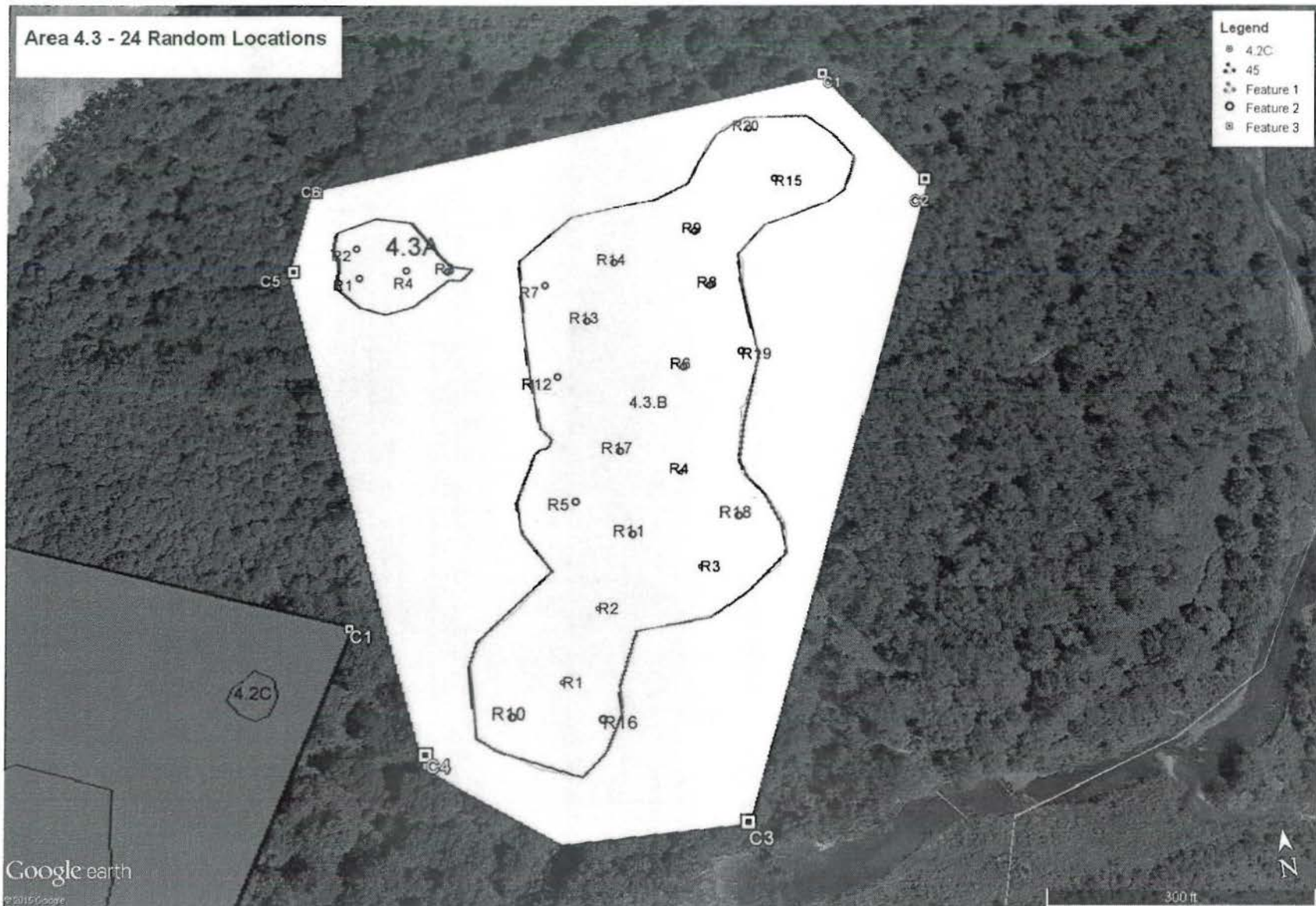


Figure 3

TABLE 1
GPS SURVEY AREA POLYGON CORNERS
Area 4.3

Corner	Latitude	Longitude
C1	42°32'31.27"N	79° 2'18.26"W
C2	42°32'29.08"N	79° 2'16.82"W
C3	42°32'20.66"N	79° 2'22.61"W
C4	42°32'22.00"N	79° 2'27.47"W
C5	42°32'28.98"N	79° 2'29.32"W
C6	42°32'30.30"N	79° 2'28.82"W

4.3

~~State~~ 6-5

3. STEP ONE - GPS SURVEY OPERATIONS (Initial as Performed)

Conduct Tailgate Safety Review.....	<u>TB 11/18</u>	<u>TB 11/19</u>	<u>TB 11/20</u>	<u>TB 11/23</u>
	(date)	(date)	(date)	(date)
Review survey parameters.....	<u>TB 11/18</u>	<u>TB 11/19</u>	<u>TB 11/20</u>	<u>TB 11/23</u>
	(date)	(date)	(date)	(date)
Verify all required tools, supplies, and equipment available.....	<u>TB 11/18</u>	<u>TB 11/19</u>	<u>TB 11/20</u>	<u>TB 11/23</u>
	(date)	(date)	(date)	(date)
Establish and Mark Boundaries of the GPS Survey Area Polygon.....	<u>TB 11/18</u>	TB N/A	TB N/A	<u>N/A</u>
	(date)	(date)	(date)	(date)
Assemble and test GPS survey equipment.....	<u>TB 11/18</u>	<u>TB 11/19</u>	<u>TB 11/20</u>	<u>TB 11/23</u>
	(date)	(date)	(date)	(date)

4.3

Perform Operability Checks.....	<u>TB 4/18</u>	<u>TB 4/19</u>	<u>TB 4/20</u>	<u>TB 4/23</u>
	(date)	(date)	(date)	(date)
Evaluate terrain and field conditions and select orientation of survey lines.....	<u>TB 4/18</u>	<u>N/A</u>	<u>TB/A</u>	<u>TB 4/23</u>
	(date)	(date)	(date)	(date)
Establish survey lines with nominal 30 meter spacing.....	<u>TB 4/18</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
	(date)	(date)	(date)	(date)
Conduct Survey operations using best available technology (See Note 1 Below).....	<u>TB 4/18</u>	<u>TB 4/19</u>	<u>TB 4/20</u>	<u>TB 4/23</u>
	(date)	(date)	(date)	(date)
Verify all documentation complete.....	<u>TB 4/18</u>	<u>TB 4/19</u>	<u>TB 4/20</u>	<u>TB 4/23</u>
	(date)	(date)	(date)	(date)
Debrief.....	<u>TB 4/18</u>	<u>TB 4/19</u>	<u>TB 4/20</u>	<u>TB 4/23</u>
	(date)	(date)	(date)	(date)

Note 1:

- If possible use automated GPS data acquisition. Walk the designated lines at the ordinary pace
- If satellite signal for the Trimble GPS unit is inadequate, use the Garmin GPS unit or Cell Tower positioning to manually record GPS position and Count rates, at 5 meter intervals, along the designated lines (in accordance with established grid system).
- If all GPS location methods are inadequate, manually log readings using measured lines at five meter intervals along the designated lines.

4. STEP TWO- STATIC RADIATION MEASUREMENTS and SOIL SAMPLING (Initial as Performed)

Conduct Tailgate Safety Review.....	<u>TB 11/18</u>	<u>TB 11/19</u>	<u>TB 11/20</u>	<u>TB 11/23</u>
	(date)	(date)	(date)	(date)
Review sampling parameters	<u>TB 11/18</u>	<u>TB 11/19</u>	<u>TB 11/20</u>	<u>TB 11/23</u>
	(date)	(date)	(date)	(date)
Verify all required tools, supplies, and equipment available	<u>TB 11/18</u>	<u>TB 11/19</u>	<u>TB 11/20</u>	<u>TB 11/23</u>
	(date)	(date)	(date)	(date)
Prepare radiological instruments for use and perform operability checks.....	<u>TB 11/18</u>	<u>TB 11/19</u>	<u>TB 11/20</u>	<u>TB 11/23</u>
	(date)	(date)	(date)	(date)

Collect Digital image(s) including location sign.....	<u>TB 11/18</u>	<u>TB 11/19</u>	<u>TB 11/20</u>	<u>TB 11/23</u>
	(date)	(date)	(date)	(date)
Collect static radiation readings in accordance with procedure.....	<u>TB 11/18</u>	<u>TB 11/19</u>	<u>TB 11/20</u>	<u>TB 11/23</u>
	(date)	(date)	(date)	(date)
Document relevant terrain, location, and other relevant physical features.....	<u>TB 11/18</u>	<u>TB 11/19</u>	<u>TB 11/20</u>	<u>TB 11/23</u>
	(date)	(date)	(date)	(date)
Collect samples in accordance with procedure and sampling parameters	<u>TB 11/18</u>	<u>TB 11/19</u>	<u>TB 11/20</u>	<u>TB 11/23</u>
	(date)	(date)	(date)	(date)
Document relevant sample features such as clay, sandy, different colors etc.	<u>TB 11/18</u>	<u>TB 11/19</u>	<u>TB 11/20</u>	<u>TB 11/23</u>
	(date)	(date)	(date)	(date)
Verify all required samples have been collected and documentation is complete	<u>TB 11/18</u>	<u>TB 11/19</u>	<u>TB 11/20</u>	<u>TB 11/23</u>
	(date)	(date)	(date)	(date)
Pack samples and equipment for transport back to vehicle(s).....	<u>TB 11/18</u>	<u>TB 11/19</u>	<u>TB 11/20</u>	<u>TB 11/23</u>
	(date)	(date)	(date)	(date)

Transport samples and equipment to Bulk Storage Warehouse.....	<u>TB 11/18</u>	<u>TB 11/19</u>	<u>TB 11/20</u>	<u>TB 11/23</u>
	(date)	(date)	(date)	(date)
Collect rinsate sample after final cleaning of the tools.....	<u>TB 11/14</u>	<u>TB 11/19</u>	<u>TB 11/20</u>	<u>TB 11/23</u>
	(date)	(date)	(date)	(date)

6. COMMUNICATION PLAN

It is anticipated that there will be cellular service in the survey areas, and since these areas are not remote, no special communication requirements apply other than periodic accountability checks.

7. RELEVANT PROCEDURES AND DOCUMENTS

- RCP-02 Rev. 2, 6/1/2014 Instrument Operating Procedure Bicon MicroRem Meter
- RCP-01 Instrument Operating Procedure Ludlum 2241-2 Ratemeter/Scaler Coupled With the Ludlum 44-9 Geiger-Mueller (GM) and 44-10 2x2 NaI Detectors
 - Project Quality Assurance Project Plan (QAPP)
- NYSERDA Environmental Survey Project Procedure 1 : Soil Sample Collection and Radiological Survey Procedure
- Project Health and Safety Plan (HASP)
 - RCP-03 Rev 3. 9/15/15 Performing a GPS Enhanced Overland Gamma Radiation Survey Including the Preparation and Assessment of Radiological and Geographical Data

4.3

~~State~~

3. STEP ONE - GPS SURVEY OPERATIONS (Initial as Performed)

Conduct Tailgate Safety Review.....	<u>TB 11/18</u>	<u>TB 11/19</u>	<u>TB 11/20</u>	_____
	(date)	(date)	(date)	(date)
Review survey parameters.....	<u>TB 11/18</u>	<u>TB 11/19</u>	<u>TB 11/20</u>	_____
	(date)	(date)	(date)	(date)
Verify all required tools, supplies, and equipment available.....	<u>TB 11/18</u>	<u>TB 11/19</u>	<u>TB 11/20</u>	_____
	(date)	(date)	(date)	(date)
Establish and Mark Boundaries of the GPS Survey Area Polygon.....	<u>TB 11/18</u>	TB 11/19	<u>TB 11/19</u>	_____
	(date)	(date)	(date)	(date)
Assemble and test GPS survey equipment.....	<u>TB 11/18</u>	<u>TB 11/19</u>	<u>TB 11/20</u>	_____
	(date)	(date)	(date)	(date)

4.3

Perform Operability Checks.....	TB 4/18	TB 4/19	TB 4/20	
	(date)	(date)	(date)	(date)
Evaluate terrain and field conditions and select orientation of survey lines.....	TB 4/18	N/A	N/A	
	(date)	(date)	(date)	(date)
Establish survey lines with nominal 30 meter spacing.....	TB 4/18	N/A	N/A	
	(date)	(date)	(date)	(date)
Conduct Survey operations using best available technology (See Note 1 Below).....	TB 4/18	TB 4/19	TB 4/20	
	(date)	(date)	(date)	(date)
Verify all documentation complete.....	TB 4/18	TB 4/19	TB 4/20	
	(date)	(date)	(date)	(date)
Debrief.....	TB 4/18	TB 4/19	TB 4/20	
	(date)	(date)	(date)	(date)

Note 1:

- If possible use automated GPS data acquisition. Walk the designated lines at the ordinary pace
- If satellite signal for the Trimble GPS unit is inadequate, use the Garmin GPS unit or Cell Tower positioning to manually record GPS position and Count rates, at 5 meter intervals, along the designated lines (in accordance with established grid system).
- If all GPS location methods are inadequate, manually log readings using measured lines at five meter intervals along the designated lines.

4. STEP TWO- STATIC RADIATION MEASUREMENTS and SOIL SAMPLING (Initial as Performed)

Conduct Tailgate Safety Review.....	<u>TB 11/18</u>	<u>TB 11/19</u>	<u>TB 11/20</u>	_____
	(date)	(date)	(date)	(date)
Review sampling parameters	<u>TB 11/18</u>	<u>TB 11/19</u>	<u>TB 11/20</u>	_____
	(date)	(date)	(date)	(date)
Verify all required tools, supplies, and equipment available	<u>TB 11/18</u>	<u>TB 11/19</u>	<u>TB 11/20</u>	_____
	(date)	(date)	(date)	(date)
Prepare radiological instruments for use and perform operability checks.....	<u>TB 11/18</u>	<u>TB 11/19</u>	<u>TB 11/20</u>	_____
	(date)	(date)	(date)	(date)

4.3

Collect Digital image(s) including location sign.....	<u>TB 11/18</u>	<u>TB 11/19</u>	<u>TB 11/20</u>	_____
	(date)	(date)	(date)	(date)
Collect static radiation readings in accordance with procedure.....	<u>TB 11/18</u>	<u>TB 11/19</u>	<u>TB 11/20</u>	_____
	(date)	(date)	(date)	(date)
Document relevant terrain, location, and other relevant physical features.....	<u>TB 11/18</u>	<u>TB 11/19</u>	<u>TB 11/20</u>	_____
	(date)	(date)	(date)	(date)
Collect samples in accordance with procedure and sampling parameters	<u>TB 11/18</u>	<u>TB 11/19</u>	<u>TB 11/20</u>	_____
	(date)	(date)	(date)	(date)
Document relevant sample features such as clay, sandy, different colors etc.	<u>TB 11/18</u>	<u>TB 11/19</u>	<u>TB 11/20</u>	_____
	(date)	(date)	(date)	(date)
Verify all required samples have been collected and documentation is complete	<u>TB 11/18</u>	<u>TB 11/19</u>	<u>TB 11/20</u>	_____
	(date)	(date)	(date)	(date)
Pack samples and equipment for transport back to vehicle(s).....	<u>TB 11/18</u>	<u>TB 11/19</u>	<u>TB 11/20</u>	_____
	(date)	(date)	(date)	(date)

Transport samples and equipment to Bulk Storage Warehouse.....	<u>TB 11/18</u>	<u>TB 11/19</u>	<u>TB 11/20</u>	_____
	(date)	(date)	(date)	(date)
Collect rinsate sample after final cleaning of the tools.....	<u>TB 11/14</u>	<u>TB 11/19</u>	<u>TB 11/20</u>	_____
	(date)	(date)	(date)	(date)

6. COMMUNICATION PLAN

It is anticipated that there will be cellular service in the survey areas, and since these areas are not remote, no special communication requirements apply other than periodic accountability checks.

7. RELEVANT PROCEDURES AND DOCUMENTS

- RCP-02 Rev. 2, 6/1/2014 Instrument Operating Procedure Bicon MicroRem Meter
- RCP-01 Instrument Operating Procedure Ludlum 2241-2 Ratemeter/Scaler Coupled With the Ludlum 44-9 Geiger-Mueller (GM) and 44-10 2x2 NaI Detectors
 - Project Quality Assurance Project Plan (QAPP)
- NYSERDA Environmental Survey Project Procedure 1 : Soil Sample Collection and Radiological Survey Procedure
- Project Health and Safety Plan (HASP)
 - RCP-03 Rev 3. 9/15/15 Performing a GPS Enhanced Overland Gamma Radiation Survey Including the Preparation and Assessment of Radiological and Geographical Data

4.3 B

Date Collected	Sample	Elevation				Coordinates	
		0-15 cm	15-30 cm	30-60 cm	60-100c cm		
11-23-15	4.3B R 1 . 1	X				42°32'22.63"N	79° 2'25.18"W
11-23-15	4.3B R 1 . 2		X				
11-23-15	4.3B R 1 . 3			X			
11-23-15	4.3B R 1 . 4				X		
11-23-15	4.3B R 2 . 1	X				42°32'23.47"N	79° 2'24.44"W
11-23-15	4.3B R 2 . 2		X				
11-23-15	4.3B R 2 . 3			X			
11-23-15	4.3B R 2 . 4				X		
11-23-15	4.3B R 3 . 1	X				42°32'23.80"N	79° 2'22.63"W
11-23-15	4.3B R 3 . 2		X				
11-23-15	4.3B R 3 . 3			X			
11-23-15	4.3B R 3 . 4				X		
11-23-15	4.3B R 4 . 1	X				42°32'25.11"N	79° 2'22.67"W
11-23-15	4.3B R 4 . 2		X				
11-23-15	4.3B R 4 . 3			X			
11-23-15	4.3B R 4 . 4				X		
11-23-15	4.3B R 4 . 5			X			
11-23-15	4.3B R 4 . 6				X		
11-18-15	4.3B R 5 . 1	X				42°32'24.91"N	79° 2'24.57"W
11-18-15	4.3B R 5 . 2		X				
11/20/15	4.3B R 6 . 1	X				42°32'26.62"N	79° 2'22.28"W
11/20/15	4.3B R 6 . 2		X				
11-20-15	4.3B R 7 . 1	X				42°32'28.22"N	79° 2'24.59"W
11-20-15	4.3B R 7 . 2		X				
11-20-15	4.3B R 8 . 1	X				42°32'27.84"N	79° 2'21.49"W
11-20-15	4.3B R 8 . 2		X				

4.3 B Cont.

Date Collected	Sample				Elevation				Coordinates	
					0-15 cm	15-30 cm	30-60 cm	60-100c cm		
11-20-15	4.3B	R	9	1	X				42°32'28.77"N	79° 2'21.57"W
11-20-15	4.3B	R	9	2		X				
11-19-15	4.3B	R	10	1	X				42°32'29.75"N	79° 2'19.77"W
11-19-15	4.3B	R	10	2		X			*	
11-18-15	4.3B	R	11	1	X				42°32'24.35"N	79° 2'23.68"W
11-18-15	4.3B	R	11	2		X				
11-18-15	4.3B	R	12	1	X				42°32'26.75"N	79° 2'24.59"W
11-18-15	4.3B	R	12	2		X				
11/20/15	4.3B	R	13	1	X				42°32'27.55"N	79° 2'23.90"W
11/20/15	4.3B	R	13	2		X				
11-23-15	4.3B	R	14	1	X				42°32'28.43"N	79° 2'23.22"W
11-23-15	4.3B	R	14	2		X				
11-20-15	4.3B	R	15	1	X				42°32'29.49"N	79° 2'19.79"W
11-20-15	4.3B	R	15	2		X				
11-19-15	4.3B	R	16	1	X				42°32'22.10"N	79° 2'24.61"W
11-19-15	4.3B	R	16	2		X				
11-18-15	4.3B	R	17	1	X				42°32'25.52"N	79° 2'23.67"W
11-18-15	4.3B	R	17	2		X				
11-18-15	4.3B	R	18	1	X				42°32'24.38"N	79° 2'21.82"W
11-18-15	4.3B	R	18	2		X				
11/20/15	4.3B	R	19	1	X				42°32'26.73"N	79° 2'21.17"W
11/20/15	4.3B	R	19	2		X				
11-20-15	4.3B	R	20	1	X				42°32'30.46"N	79° 2'20.06"W
11-20-15	4.3B	R	20	2		X				
11-20-15	4.3B	R	20	5	X					
11-20-15	4.3B	R	20	6		X				

11/19/15 42° 32' 22.8" N 079° 02' 25.8" W

Survey Area 4.4

(4.4A, 4.4B and 4.4C 4.4C)

Survey and Sampling

Field Guide

1. INTRODUCTION AND PURPOSE

The purpose of this survey and sampling field guide (SSFG) is to:

- Present the survey and sampling parameters and objectives directly pertinent to Survey area 4.4 which includes sampling zones 4.4A, 4.4B, 4.4C and 4.4D.
- Ensure all pertinent information and documentation is recorded.
- Guide the survey and sampling team through the survey and sampling process.

2. GENERAL DESCRIPTION OF THE SURVEY AREAS

Survey area 4.2 is located on the Seneca Nation of Indians in proximity to Cattaraugus Creek. The area lies South of the creek and to the East of Areas 4.1, 4.2 and 4.3 (Nominally South of 1061 4 Mile Level Road). The Northernmost Corner (C-4) lies nominally 1400 feet South of 4 Mile Level Road. The survey area is wooded. Figure 1 shows the general area of the Survey Area 4. The shaded polygon delineates the areas to be GPS surveyed, while the irregular shapes represent the primary areas to be sampled. If elevated areas are detected by the GPS survey that are outside of the existing sampling zones, samples may be collected at these elevated areas as well. Figure 2 is a satellite photo which provides a closer view of areas 4.4 and 4.5. Figure 3 shows some pre-selected sampling points within Area 4.4. Table 1 provides the GPS coordinates for the Area 4.4 GPS Survey Polygon.

Figure 1
General View of Area 4

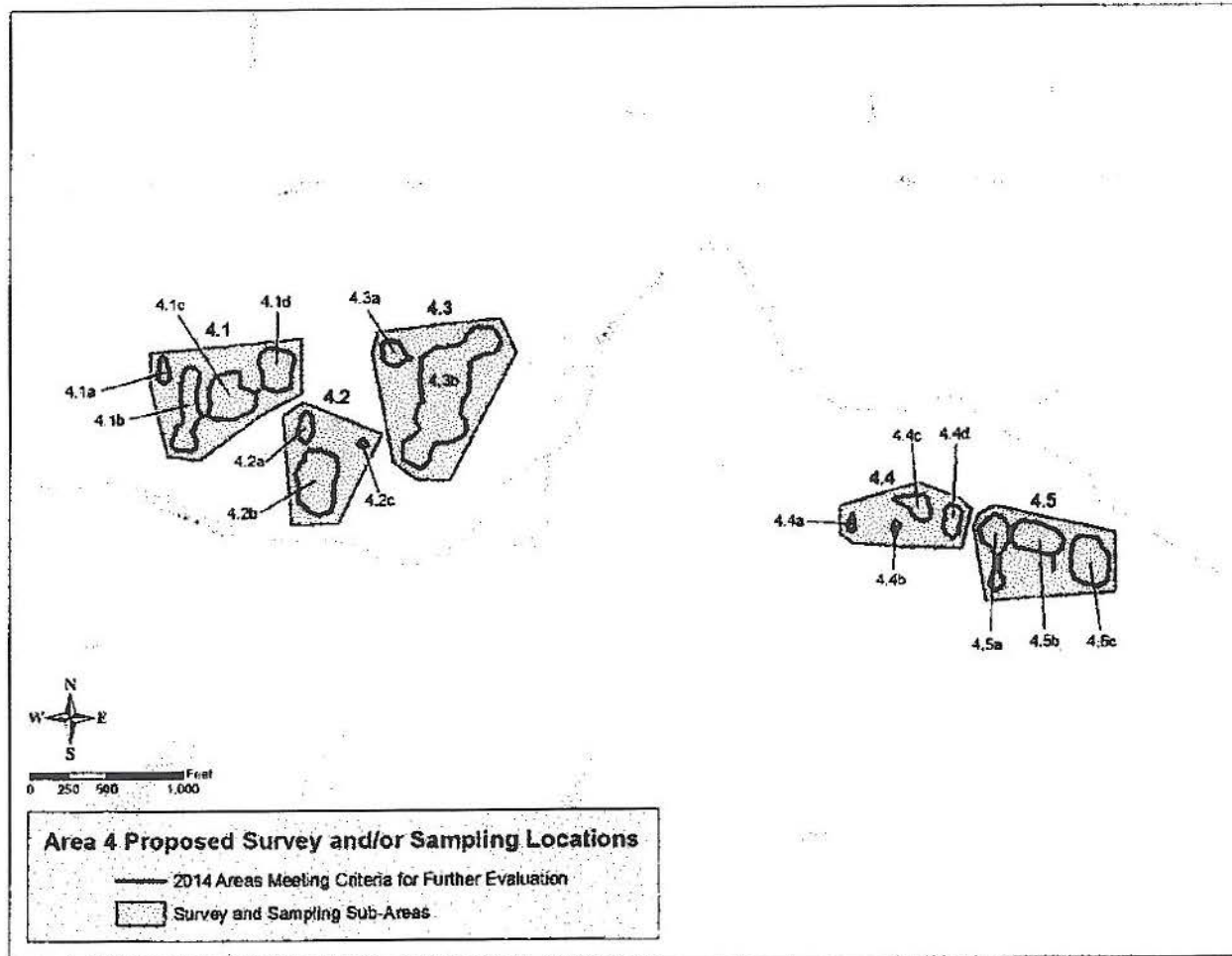


Figure 2

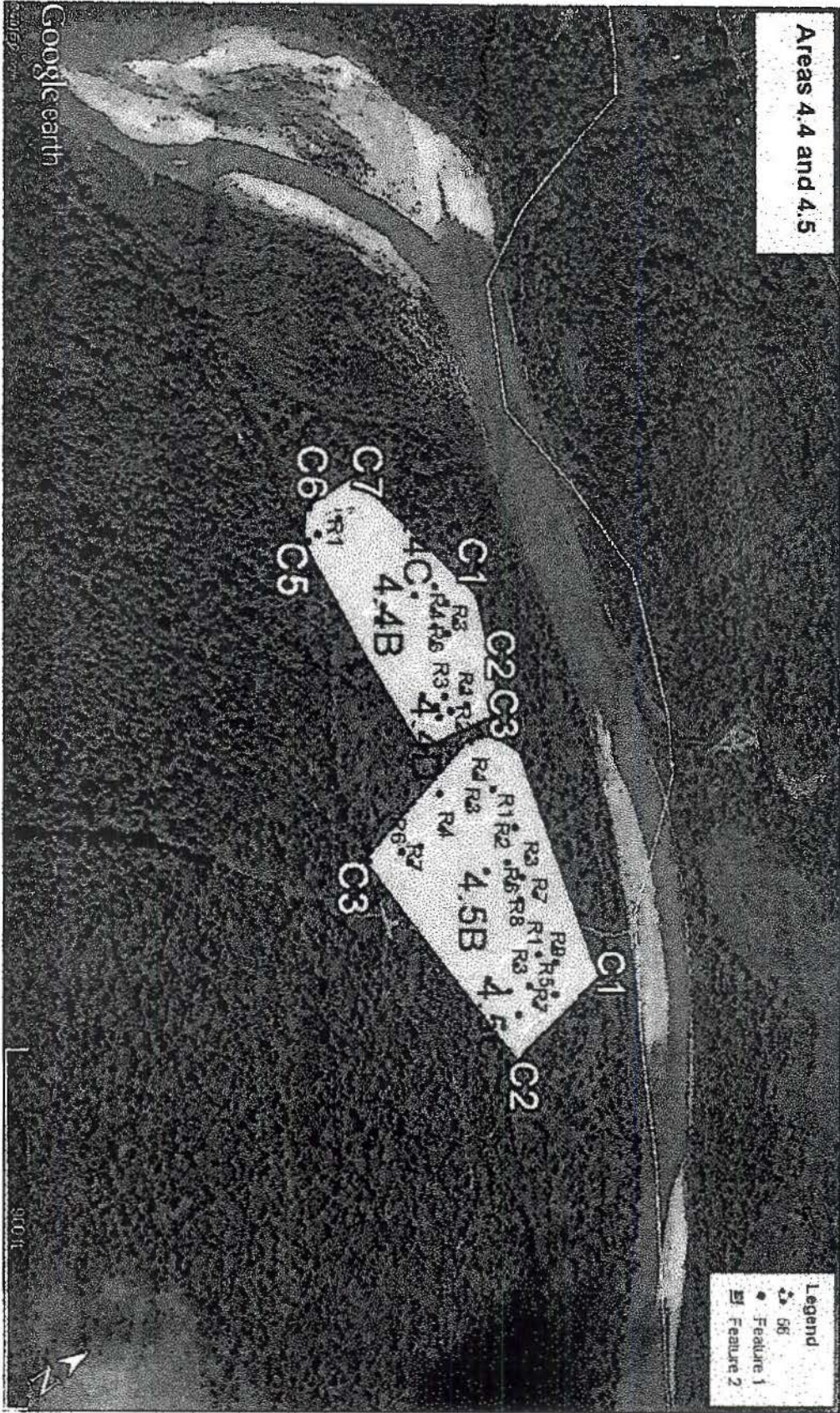


Figure 3

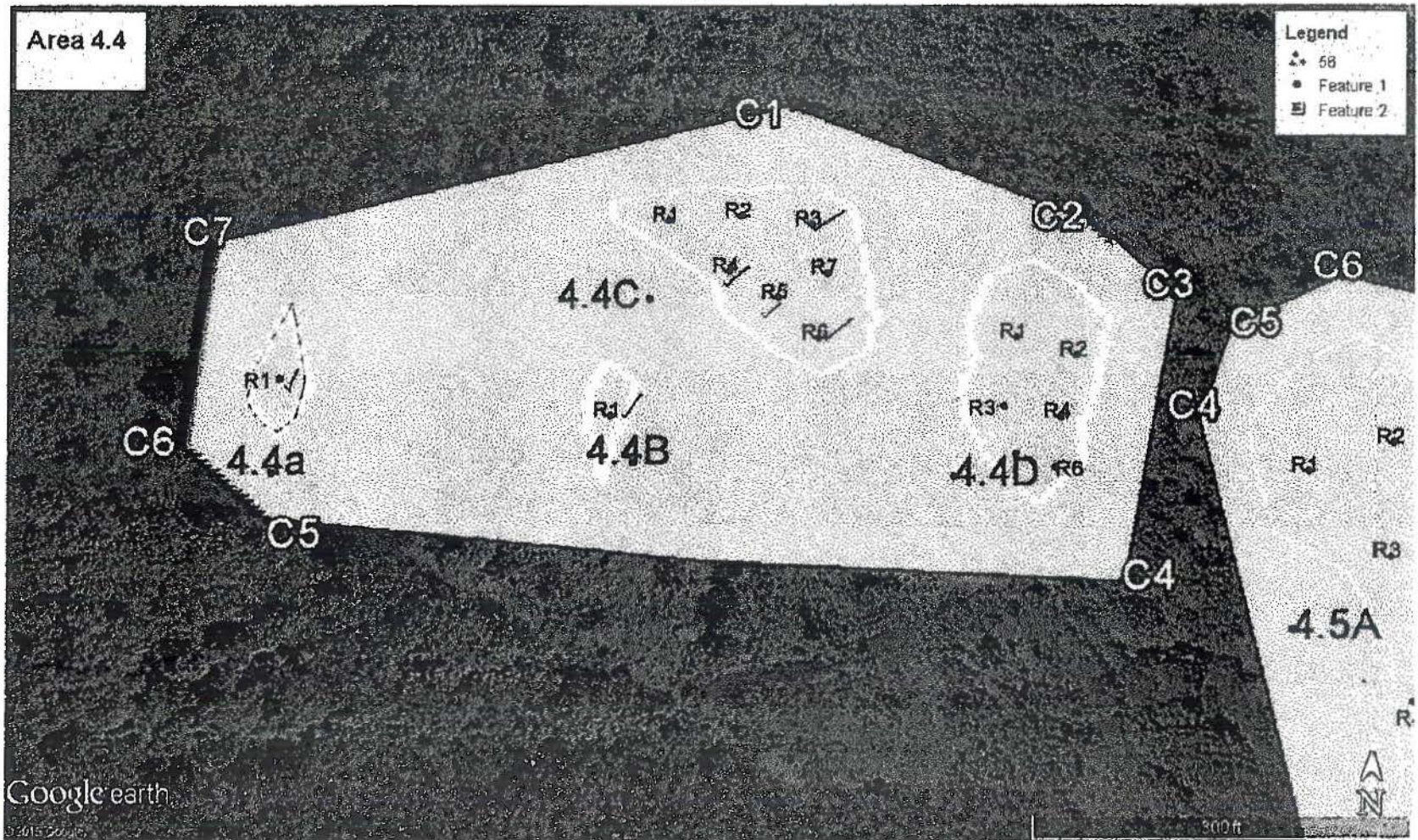


TABLE 1

GPS SURVEY AREA POLYGON CORNERS

Corner	Latitude	Longitude
C1	42°32'20.54"N	79° 1'41.29"W
C2	42°32'19.53"N	79° 1'37.65"W
C3	42°32'18.84"N	79° 1'36.71"W
C4	42°32'16.33"N	79° 1'37.51"W
C5	42°32'16.62"N	79° 1'47.15"W
C6	42°32'17.22"N	79° 1'48.22"W
C7	42°32'19.06"N	79° 1'48.24"W

3. STEP ONE - GPS SURVEY OPERATIONS (Initial as Performed)

Conduct Tailgate Safety Review.....	<u>TB 4/25</u>	TB 4/30 ^{TB}	_____	_____
	(date)	(date) ^{TB}	(date)	(date)
Review survey parameters.....	<u>TB 4/25</u>	TB 4/30	_____	_____
	(date)	(date)	(date)	(date)
Verify all required tools, supplies, and equipment available.....	<u>TB 4/25</u>	TB 4/30 ^{TB}	_____	_____

11-18-15

	(date)	(date)	(date)	(date)
Establish and Mark Boundaries of the GPS Survey Area Polygon.....	TB 1/25	_____	_____	_____
	(date)	(date)	(date)	(date)
Assemble and test GPS survey equipment.....	TB 1/25	_____	_____	_____
	(date)	(date)	(date)	(date)
Perform Operability Checks.....	TB 1/25	_____	_____	_____
	(date)	(date)	(date)	(date)
Evaluate terrain and field conditions and select orientation of survey lines.....	TB 1/25	_____	_____	_____
	(date)	(date)	(date)	(date)
Establish survey lines with nominal 30 meter spacing.....	TB 1/25	_____	_____	_____
	(date)	(date)	(date)	(date)

11-18-15

Conduct Survey operations using best available technology (See Note 1
Below).....

TB 4/25

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

Verify all documentation complete.....

TB 4/25

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

Debrief.....

TB 4/25

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

Note 1:

- If possible use automated GPS data acquisition. Walk the designated lines at the ordinary pace
- If satellite signal for the Trimble GPS unit is inadequate, use the Garmin GPS unit or Cell Tower positioning to manually record GPS position and Count rates, at 5 meter intervals, along the designated lines (in accordance with established grid system).
- Alternatively establish grid lines using local coordinates system.
- If all GPS location methods are inadequate, manually log readings using measured lines at five meter intervals along the designated lines.

11-18-15

6. COMMUNICATION PLAN

It is anticipated that there will be cellular service in the survey areas, and since these areas are not remote, no special communication requirements apply other than periodic accountability checks.

7. RELEVANT PROCEDURES AND DOCUMENTS

- RCP-02 Rev. 2, 6/1/2014 Instrument Operating Procedure Bicron MicroRem Meter
- RCP-01 Instrument Operating Procedure Ludlum 2241-2 Ratemeter/Scaler Coupled With the Ludlum 44-9 Geiger-Mueller (GM) and 44-10 2x2 NaI Detectors
 - Project Quality Assurance Project Plan (QAPP)
- NYSERDA Environmental Survey Project Procedure 1 : Soil Sample Collection and Radiological Survey Procedure
- Project Health and Safety Plan (HASP)
 - RCP-03 Rev 3. 9/15/15 Performing a GPS Enhanced Overland Gamma Radiation Survey Including the Preparation and Assessment of Radiological and Geographical Data

8. Attachments and other Documents:

- Maps
- Sampling Specifications Sheets
- Sample collection forms
- Chain of Custody Forms
- Logbooks

4. STEP TWO- STATIC RADIATION MEASUREMENTS and SOIL SAMPLING (Initial as Performed)

Conduct Tailgate Safety Review.....	<u>TB 11/25</u>	<u>TB 11/30</u>	_____	_____
	(date)	(date)	(date)	(date)
Review sampling parameters	<u>TB 11/25</u>	<u>TB 11/30</u>	_____	_____
	(date)	(date)	(date)	(date)
Verify all required tools, supplies, and equipment available	<u>TB 11/25</u>	<u>TB 11/30</u>	_____	_____
	(date)	(date)	(date)	(date)
Prepare radiological instruments for use and perform operability checks.....	<u>TB 11/25</u>	<u>TB 11/30</u>	_____	_____
	(date)	(date)	(date)	(date)
Collect Digital image(s) including location sign.....	<u>TB 11/25</u>	<u>TB 11/30</u>	_____	_____
	(date)	(date)	(date)	(date)
Collect static radiation readings in accordance with procedure.....	<u>TB 11/25</u>	<u>TB 11/30</u>	_____	_____
	(date)	(date)	(date)	(date)
Document relevant terrain, location, and other relevant physical features.....	<u>TB 11/25</u>	<u>TB 11/30</u>	_____	_____
	(date)	(date)	(date)	(date)
Collect samples in accordance with procedure and sampling parameters	<u>TB 11/25</u>	<u>TB 11/30</u>	_____	_____

	(date)	(date)	(date)	(date)
Document relevant sample features such as clay, sandy, different colors etc.	<u>TB 11/25</u>	<u>TB 11/30</u>	_____	_____
	(date)	(date)	(date)	(date)
Verify all required samples have been collected and documentation is complete	<u>TB 11/25</u>	<u>TB 11/30</u>	_____	_____
	(date)	(date)	(date)	(date)
Pack samples and equipment for transport back to vehicle(s).....	<u>TB 11/25</u>	<u>TB 11/30</u>	_____	_____
	(date)	(date)	(date)	(date)
Transport samples and equipment to Bulk Storage Warehouse.....	<u>TB 11/25</u>	<u>TB 11/30</u>	_____	_____
	(date)	(date)	(date)	(date)
Collect rinsate sample after final cleaning of the tools.....	<u>TB 11/25</u>	<u>TB 11/30</u>	_____	_____
	(date)	(date)	(date)	(date)

AREA 4.4D

Date Collected	Sample	Elevation				Coordinates	
		0-15 cm	15-30 cm	30-60 cm	60-100c cm		
11-30-15	4.4D R 1 . 1	X				42°32'18.42"N	79° 1'38.59"W
11-30-15	4.4D R 1 . 2		X				
11-30-15	4.4D R 1 . 3			X			
11-30-15	4.4D R 1 . 4				X		
11-30-15	4.4D R 2 . 1	X				42°32'18.27"N	79° 1'37.89"W
11-30-15	4.4D R 2 . 2		X				
11-30-15	4.4D R 2 . 3			X			
11-30-15	4.4D R 2 . 4				X		
11-30-15	4.4D R 2 . 5		X				
11-30-15	4.4D R 3 . 1	X				42°32'17.79"N	79° 1'38.77"W
11-30-15	4.4D R 3 . 2		X				
11-30-15	4.4D R 4 . 1	X				42°32'17.71"N	79° 1'38.11"W
11-30-15	4.4D R 4 . 2		X				
11-30-15	4.4D R 5 . 1	X				42°32'17.38"N	79° 1'38.65"W
11-30-15	4.4D R 5 . 2		X				
11-30-15	4.4D R 6 . 1	X				42°32'17.27"N	79° 1'38.20"W
11-30-15	4.4D R 6 . 2		X				
11-30-15	4.4D R 6 . 5	X					

The MJW Companies
GPS Field Survey Checklist

The following field survey checklist is used once the survey team has walked to the location that they will begin a GPS survey. This checklist is intended to verify none of the cables or settings changed or cables came loose between the initial setup location and the field survey location. Complete step 9 once the current walkover segment is complete.

1. 4/3 Verify the Ludlum Meter is in Rate mode
2. 4/3 Verify that the Ludlum Meter is alternating display of "DUP" and "Value"
3. 4/3 Set Menu 1 to "Status" and Menu 2 to "Receiver"
4. 4/3 Verify that Antenna states "External"
5. 4/3 Set Menu 1 to "Data"
6. 4/3 Name a file to start the current survey and start the data logger

Filename: 3215 a. 4 3

7. 4/3 Set Menu 1 to "Status" and Menu 2 to "Sensor"
8. 4/3 Verify that the sensor field is reading the same as the display on the Ludlum
9. 4/3 When finished, set Menu 1 to "Data" and close the current file.

Name: Joe Ru

Date: 4/3/15

The MJW Companies

GPS Initial Setup Checklist

1. AB Complete source check of Ludlum Meter
2. AB Power off Ludlum Meter
3. AB Verify Trimble is shutdown (not in suspend mode)
4. AB Connect the Serial Interface Adapter (SIA) to the Trimble Unit
5. AB Connect the Serial cable to the Ludlum Meter
6. AB Connect the Serial cable to the Trimble SIA
7. AB Connect external GPS antenna cable to the Trimble
8. AB Power on Ludlum Meter to Rate mode
9. AB Verify that the Ludlum Meter is alternating display of "DUP" and "Value"
10. AB Power on the Trimble and wait for it to completely boot
11. AB Launch TerraSync and wait for it to load and acquire satellites
12. AB Set Menu 1 to "Status" and Menu 2 to "Receiver"
13. AB Verify that Antenna states "External"
14. AB Set Menu 1 to "Data"
15. AB Name a test file and start the data logger
16. AB Set Menu 1 to "Status" and Menu 2 to "Sensor"
17. AB Verify that the sensor field is reading the same as the display on the Ludlum
18. AB Set Menu 1 to "Data" and close the current file.

Name:

Julie Bavin

Date:

11/30/15

Survey Area 4.5

(4.5A, 4.5B and 4.5C)

Survey and Sampling

Field Guide

1. INTRODUCTION AND PURPOSE

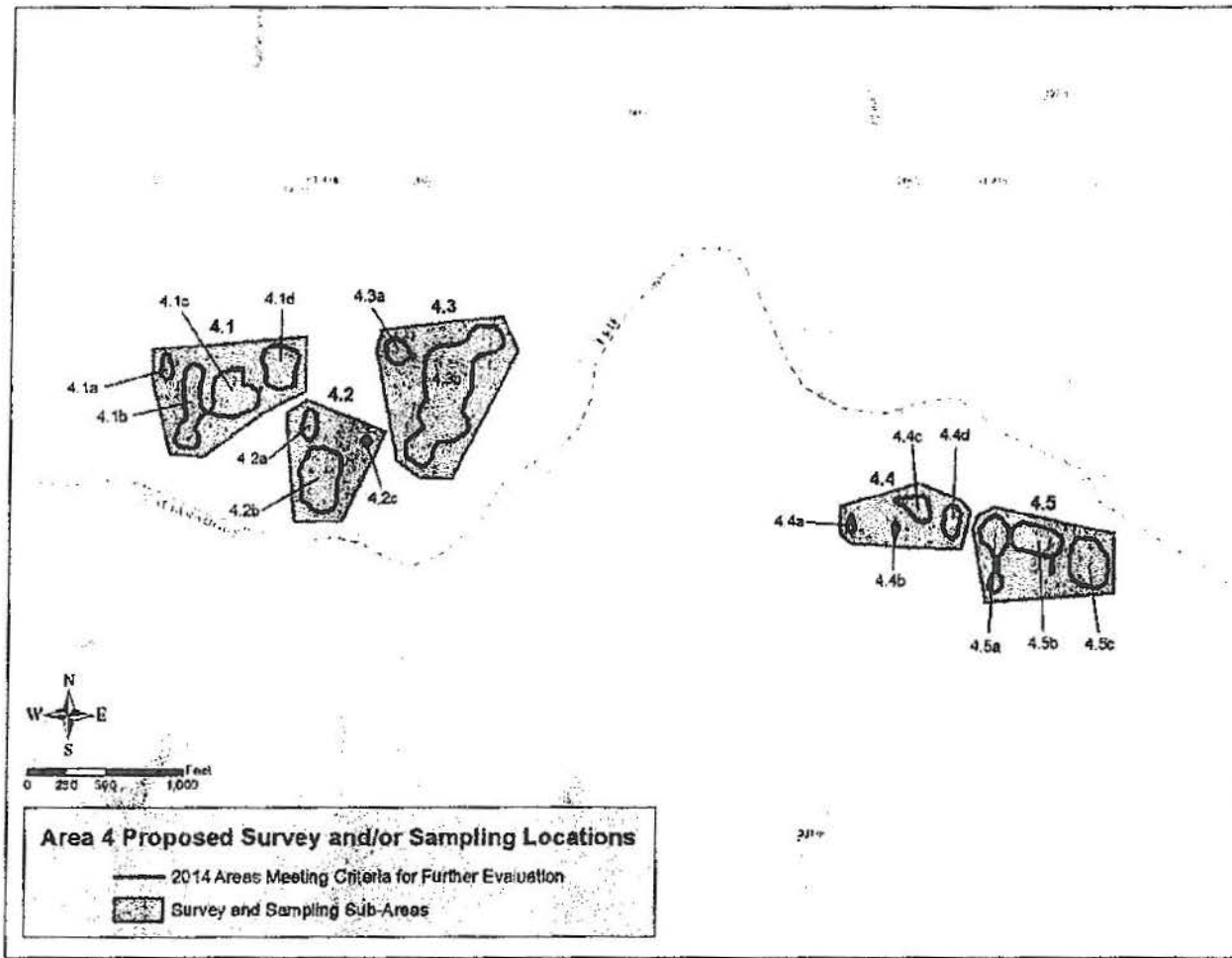
The purpose of this survey and sampling field guide (SSFG) is to:

- Present the survey and sampling parameters and objectives directly pertinent to Survey area 4.5 which includes sampling zones 4.5A, 4.5B, and 4.5C.
- Ensure all pertinent information and documentation is recorded.
- Guide the survey and sampling team through the survey and sampling process.

2. GENERAL DESCRIPTION OF THE SURVEY AREAS

Survey area 4.5s located on the Seneca Nation of Indians in proximity to Cattaraugus Creek. The area lies South of the creek and to the East of Areas 4.1,4.2 and 4.3. The survey area is wooded. Figure 1 shows the general area of the Survey Area 4. The shaded polygon delineates the areas to be GPS surveyed, while the irregular shapes represent the primary areas to be sampled. If elevated areas are detected by the GPS survey that are outside of the existing sampling zones, samples may be collected at these elevated areas as well. Figure 2 is a satellite photo which provides a closer view of areas 4.4 and 4.5. Figure 3 shows some pre-selected sampling points within Area 4.5. Table 1 provides the GPS coordinates for the Area 4.5 GPS Survey Polygon.

Figure 1
General View of Area 4



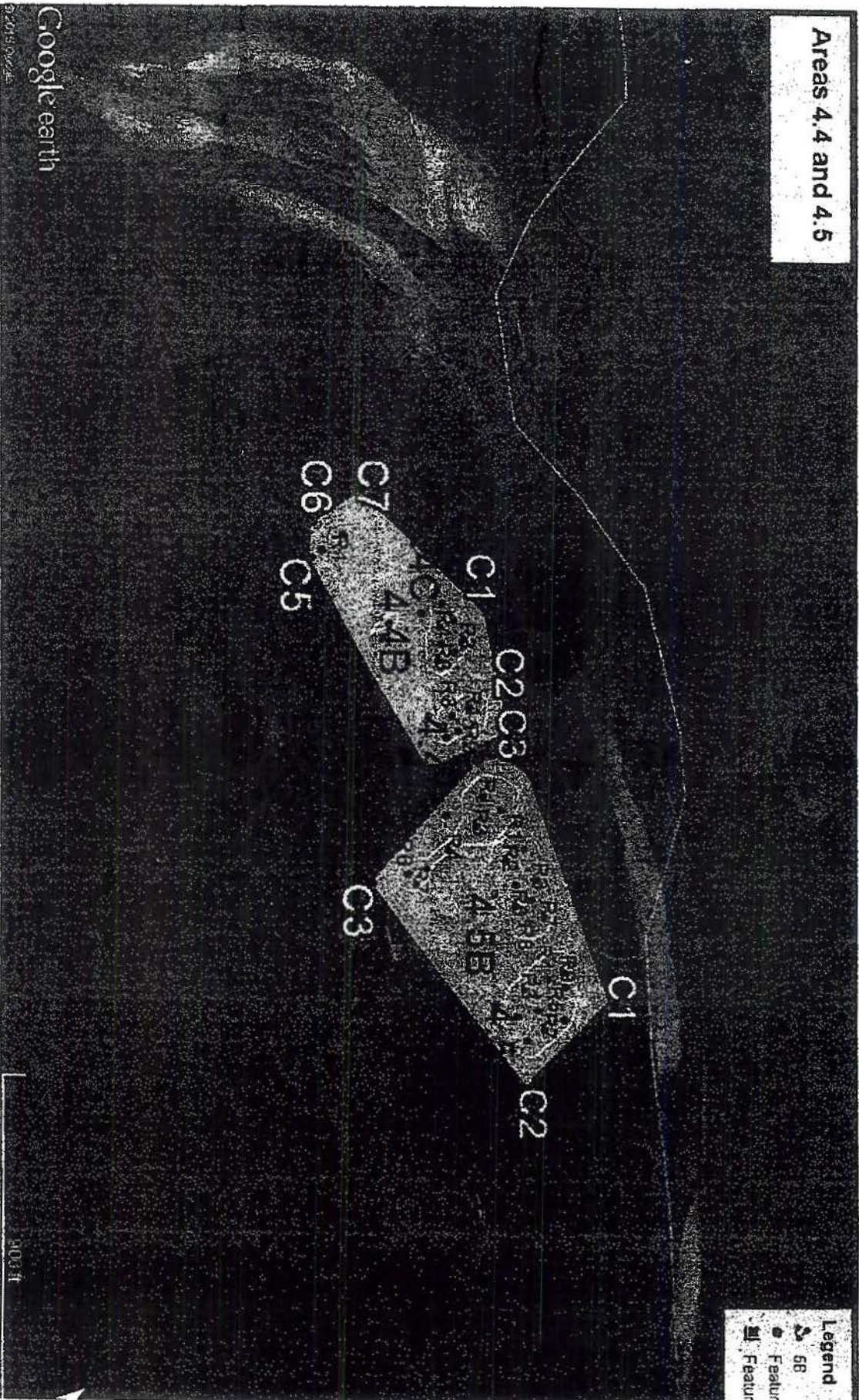


Figure 2

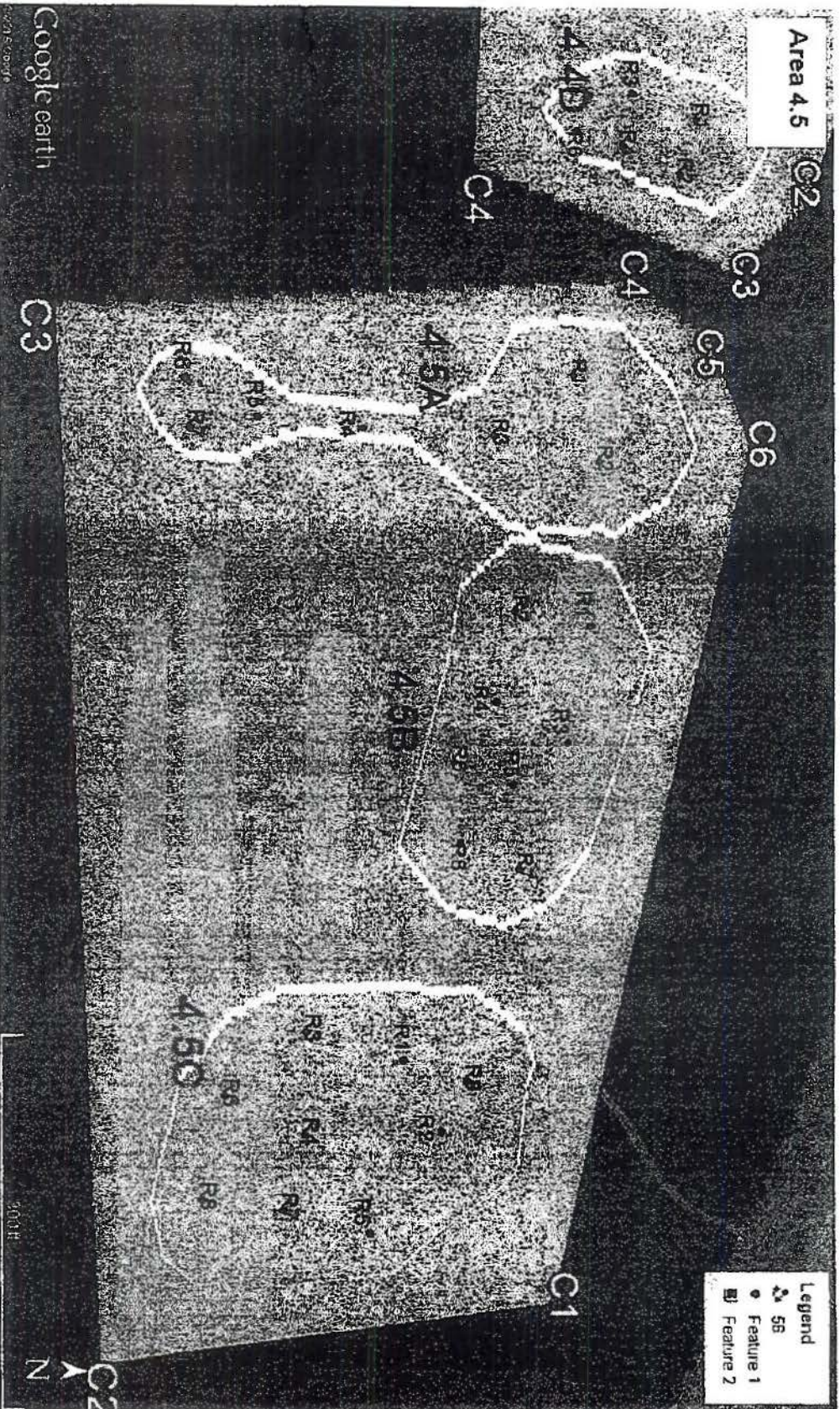


Figure 3

TABLE 1
GPS SURVEY AREA POLYGON CORNERS
Area 4.5

Corner	Latitude	Longitude
C1	42°32'17.35"N	79° 1'24.13"W
C2	42°32'13.49"N	79° 1'24.03"W
C3	42°32'12.90"N	79° 1'35.43"W
C4	42°32'17.74"N	79° 1'36.53"W
C5	42°32'18.57"N	79° 1'36.06"W
C6	42°32'19.06"N	79° 1'34.65"W

3. STEP ONE - GPS SURVEY OPERATIONS (Initial as Performed)

Conduct Tailgate Safety Review..... TB 12/1 _____
 (date) (date) (date) (date)

Review survey parameters..... TB 12/1 _____
 (date) (date) (date) (date)

Verify all required tools, supplies, and equipment available.....	TB 12/7	_____	_____	_____	_____
	(date)	(date)	(date)	(date)	(date)
Establish and Mark Boundaries of the GPS Survey Area Polygon.....	TB 12/7	_____	_____	_____	_____
	(date)	(date)	(date)	(date)	(date)
Assemble and test GPS survey equipment.....	TB 12/7	_____	_____	_____	_____
	(date)	(date)	(date)	(date)	(date)
Perform Operability Checks.....	TB 12/7	_____	_____	_____	_____
	(date)	(date)	(date)	(date)	(date)
Evaluate terrain and field conditions and select orientation of survey lines.....	TB 12/7	_____	_____	_____	_____
	(date)	(date)	(date)	(date)	(date)
Establish survey lines with nominal 30 meter spacing.....	TB 12/7	_____	_____	_____	_____
	(date)	(date)	(date)	(date)	(date)

Conduct Survey operations using best available technology (See Note 1

Below).....TB 12/7 _____
(date) (date) (date) (date)

Verify all documentation complete.....TB 12/7 _____
(date) (date) (date) (date)

Debrief.....TB 12/7 _____
(date) (date) (date) (date)

Note 1:

- If possible use automated GPS data acquisition. Walk the designated lines at the ordinary pace
- If satellite signal for the Trimble GPS unit is inadequate, use the Garmin GPS unit or Cell Tower positioning to manually record GPS position and Count rates, at 5 meter intervals, along the designated lines (in accordance with established grid system).
- Alternatively establish grid lines using local coordinates system.
- If all GPS location methods are inadequate, manually log readings using measured lines at five meter intervals along the designated lines.

4. STEP TWO- STATIC RADIATION MEASUREMENTS and SOIL SAMPLING (Initial as Performed)

Conduct Tailgate Safety Review.....	TB 12/7	_____	_____	_____
	(date)	(date)	(date)	(date)
Review sampling parameters	TB 12/7	_____	_____	_____
	(date)	(date)	(date)	(date)
Verify all required tools, supplies, and equipment available	TB 12/7	_____	_____	_____
	(date)	(date)	(date)	(date)
Prepare radiological instruments for use and perform operability checks.....	TB 12/7	_____	_____	_____
	(date)	(date)	(date)	(date)
Collect Digital image(s) including location sign.....	TB 12/7	_____	_____	_____
	(date)	(date)	(date)	(date)
Collect static radiation readings in accordance with procedure.....	TB 12/7	_____	_____	_____
	(date)	(date)	(date)	(date)
Document relevant terrain, location, and other relevant physical features.....	TB 12/7	_____	_____	_____
	(date)	(date)	(date)	(date)

Collect samples in accordance with procedure and sampling parameters TB 12/17 _____
(date) (date) (date) (date)

Document relevant sample features such as clay, sandy, different colors etc. TB 12/17 _____
(date) (date) (date) (date)

Verify all required samples have been collected and documentation is complete TB 12/17 _____
(date) (date) (date) (date)

Pack samples and equipment for transport back to vehicle(s)..... TB 12/17 _____
(date) (date) (date) (date)

Transport samples and equipment to Bulk Storage Warehouse..... TB 12/17 _____
(date) (date) (date) (date)

Collect rinsate sample after final cleaning of the tools..... TB 12/17 _____
(date) (date) (date) (date)

6. COMMUNICATION PLAN

It is anticipated that there will be cellular service in the survey areas, and since these areas are not remote, no special communication requirements apply other than periodic accountability checks.

7. RELEVANT PROCEDURES AND DOCUMENTS

- RCP-02 Rev. 2, 6/1/2014 Instrument Operating Procedure Bicon MicroRem Meter
- RCP-01 Instrument Operating Procedure Ludlum 2241-2 Ratemeter/Scaler Coupled With the Ludlum 44-9 Geiger-Mueller (GM) and 44-10 2x2 NaI Detectors
 - Project Quality Assurance Project Plan (QAPP)
- NYSERDA Environmental Survey Project Procedure 1 : Soil Sample Collection and Radiological Survey Procedure
- Project Health and Safety Plan (HASP)
 - RCP-03 Rev 3. 9/15/15 Performing a GPS Enhanced Overland Gamma Radiation Survey Including the Preparation and Assessment of Radiological and Geographical Data

8. Attachments and other Documents:

- Maps
- Sampling Specifications Sheets
- Sample collection forms
- Chain of Custody Forms
- Logbooks

AREA 4.5A

Date Collected	Sample	Elevation				Coordinates	
		0-15 cm	15-30 cm	30-60 cm	60-100c cm		
12-7-15	4.5A R 1 . 1	X				42°32'17.30"N	79° 1'35.28"W
12-7-15	4.5A R 1 . 2		X				
12-7-15	4.5A R 1 . 3			X			
12-7-15	4.5A R 1 . 4				X		
12-7-15	4.5A R 2 . 1	X				42°32'17.57"N	79° 1'34.28"W
12-7-15	4.5A R 2 . 2		X				
12-7-15	4.5A R 2 . 3			X			
12-7-15	4.5A R 2 . 4				X		
12-7-15	4.5A R 2 . 5			X			
12-7-15	4.5A R 2 . 6				X		
12-1-15	4.5A R 3 . 1	X				42°32'16.59"N	79° 1'34.47"W
12-1-15	4.5A R 3 . 2		X				
12-1-15	4.5A R 4 . 1	X				42°32'15.42"N	79° 1'34.41"W
12-1-15	4.5A R 4 . 2		X				
12-1-15	4.5A R 5 . 1	X				42°32'14.53"N	79° 1'34.42"W
12-1-15	4.5A R 5 . 2		X				
12-1-15	4.5A R 6 . 1	X				42°32'13.94"N	79° 1'34.77"W
12-1-15	4.5A R 6 . 2		X				
12-1-15	4.5A R 7 . 1	X				42°32'13.99"N	79° 1'34.22"W
12-1-15	4.5A R 7 . 2		X				

AREA 4.5B

Date Collected	Sample	Elevation				Coordinates	
		0-15 cm	15-30 cm	30-60 cm	60-100c cm		
12-7-15	4.5B R 1.1	X				42°32'17.54"N	79° 1'32.29"W
12-7-15	4.5B R 1.2		X				
12-7-15	4.5B R 1.3			X			
12-7-15	4.5B R 1.4				X		
12-7-15	4.5B R 2.1	X				42°32'16.82"N	79° 1'32.41"W
12-7-15	4.5B R 2.2		X				
12-7-15	4.5B R 2.3			X			
12-7-15	4.5B R 2.4				X		
12-1-15	4.5B R 3.1	X				42°32'17.35"N	79° 1'30.86"W
12-1-15	4.5B R 3.2		X				
12-1-15	4.5B R 3.5	X					
12-1-15	4.5B R 3.6		X				
12-1-15	4.5B R 4.1	X				42°32'16.67"N	79° 1'31.32"W
12-1-15	4.5B R 4.2		X				
12-1-15	4.5B R 5.1	X				42°32'16.85"N	79° 1'30.34"W
12-1-15	4.5B R 5.2		X				
12-1-15	4.5B R 6.1	X				42°32'16.30"N	79° 1'30.60"W
12-1-15	4.5B R 6.2		X				
12-1-15	4.5B R 7.1	X				42°32'16.93"N	79° 1'29.33"W
12-1-15	4.5B R 7.2		X				
12-1-15	4.5B R 8.1	X				42°32'16.38"N	79° 1'29.64"W
12-1-15	4.5B R 8.2		X				

AREA 4.5C

Date Collected	Sample	Elevation				Coordinates	
		0-15 cm	15-30 cm	30-60 cm	60-100c cm		
12-2-15	4.5C R 1 . 1	X				42°32'15.93"N	79° 1'27.13"W
12-2-15	4.5C R 1 . 2		X				
12-2-15	4.5C R 1 . 3			X			
12-2-15	4.5C R 1 . 4				X		
12-2-15	4.5C R 2 . 1	X				42°32'16.29"N	79° 1'26.27"W
12-2-15	4.5C R 2 . 2		X				
12-2-15	4.5C R 2 . 3			X			
12-2-15	4.5C R 2 . 4				X		
12-1-15	4.5C R 3 . 1	X				42°32'15.09"N	79° 1'27.50"W
12-1-15	4.5C R 3 . 2		X				
12-1-15	4.5C R 3 . 5	X					
12-1-15	4.5C R 3 . 6		X				
12-1-15	4.5C R 4 . 1	X				42°32'15.10"N	79° 1'26.33"W
12-1-15	4.5C R 4 . 2		X				
12-1-15	4.5C R 5 . 1	X				42°32'15.68"N	79° 1'25.14"W
12-1-15	4.5C R 5 . 2		X				
12-1-15	4.5C R 6 . 1	X				42°32'14.43"N	79° 1'26.82"W
12-1-15	4.5C R 6 . 2		X				
12-1-15	4.5C R 7 . 1	X				42°32'14.94"N	79° 1'25.49"W
12-1-15	4.5C R 7 . 2		X				
12-1-15	4.5C R 8 . 1	X				42°32'14.27"N	79° 1'25.68"W
12-1-15	4.5C R 8 . 2		X				
12-1-15	4.5C R 9 . 1	X				42°32'16.51"N	79° 1'26.84"W
12-1-15	4.5C R 9 . 2		X				

The MJW Companies
GPS Initial Setup Checklist

4.5

1. AB Complete source check of Ludlum Meter
2. AB Power off Ludlum Meter
3. AB Verify Trimble is shutdown (not in suspend mode)
4. AB Connect the Serial Interface Adapter (SIA) to the Trimble Unit
5. AB Connect the Serial cable to the Ludlum Meter
6. AB Connect the Serial cable to the Trimble SIA
7. AB Connect external GPS antenna cable to the Trimble
8. AB Power on Ludlum Meter to Rate mode
9. AB Verify that the Ludlum Meter is alternating display of "DUP" and "Value"
10. AB Power on the Trimble and wait for it to completely boot
11. AB Launch TerraSync and wait for it to load and acquire satellites
12. AB Set Menu 1 to "Status" and Menu 2 to "Receiver"
13. AB Verify that Antenna states "External"
14. AB Set Menu 1 to "Data"
15. AB Name a test file and start the data logger
16. AB Set Menu 1 to "Status" and Menu 2 to "Sensor"
17. AB Verify that the sensor field is reading the same as the display on the Ludlum
18. AB Set Menu 1 to "Data" and close the current file.

Name:

Julie H. Beck

Date:

12/2/15

The MJW Companies

GPS Field Survey Checklist

The following field survey checklist is used once the survey team has walked to the location that they will begin a GPS survey. This checklist is intended to verify none of the cables or settings changed or cables came loose between the initial setup location and the field survey location. Complete step 9 once the current walkover segment is complete.

1. AB Verify the Ludlum Meter is in Rate mode
2. AB Verify that the Ludlum Meter is alternating display of "DUP" and "Value"
3. AB Set Menu 1 to "Status" and Menu 2 to "Receiver"
4. AB Verify that Antenna states "External"
5. AB Set Menu 1 to "Data"
6. AB Name a file to start the current survey and start the data logger

Filename: 12 2 15 4.5 2

7. AB Set Menu 1 to "Status" and Menu 2 to "Sensor"
8. AB Verify that the sensor field is reading the same as the display on the Ludlum
9. AB When finished, set Menu 1 to "Data" and close the current file.

Name: Julie H. Bin Date: 12/2/15

The MJW Companies
GPS Field Survey Checklist

The following field survey checklist is used once the survey team has walked to the location that they will begin a GPS survey. This checklist is intended to verify none of the cables or settings changed or cables came loose between the initial setup location and the field survey location. Complete step 9 once the current walkover segment is complete.

1. 4/13 Verify the Ludlum Meter is in Rate mode
2. 4/13 Verify that the Ludlum Meter is alternating display of "DUP" and "Value"
3. 4/13 Set Menu 1 to "Status" and Menu 2 to "Receiver"
4. 4/13 Verify that Antenna states "External"
5. 4/13 Set Menu 1 to "Data"
6. 4/13 Name a file to start the current survey and start the data logger

Filename: 11 30 15 4.5

7. 4/13 Set Menu 1 to "Status" and Menu 2 to "Sensor"
8. 4/13 Verify that the sensor field is reading the same as the display on the Ludlum
9. 4/13 When finished, set Menu 1 to "Data" and close the current file.

Name: John P. [Signature] Date: 4/30/12

Survey Area 5.1, 5.5 and 5.6

Survey and Sampling

Field Guide

1. INTRODUCTION AND PURPOSE

The purpose of this survey and sampling field guide (SSFG) is to:

- Present the survey and sampling parameters and objectives directly pertinent to Survey areas 5.1, 5.5, and 5.6. Ensure all pertinent information and documentation is recorded.
- Guide the survey and sampling team through the survey and sampling process.

2. GENERAL DESCRIPTION OF THE SURVEY AREAS

Survey area 4.1 is located on the Seneca Nation of Indians in the general vicinity of 12283 4 Mile Level Road). The survey area is wooded. Figure 1 shows the general area of the Area 5 survey areas. Figure 2 provides a closer view of Areas 5.1, 5.5, and 5.6. Figures 3 and 4 provide slightly closer views. The shaded polygon delineates the areas to be GPS surveyed, while the irregular shapes represent the primary areas to be sampled. If elevated areas are detected by the GPS survey that are outside of the existing sampling zones, samples may be collected at these elevated areas as well. Tables 1,2 and 3 provide the GPS coordinates for the GPS Survey Polygons.

Figure 1
General View of Area 5 Survey Areas

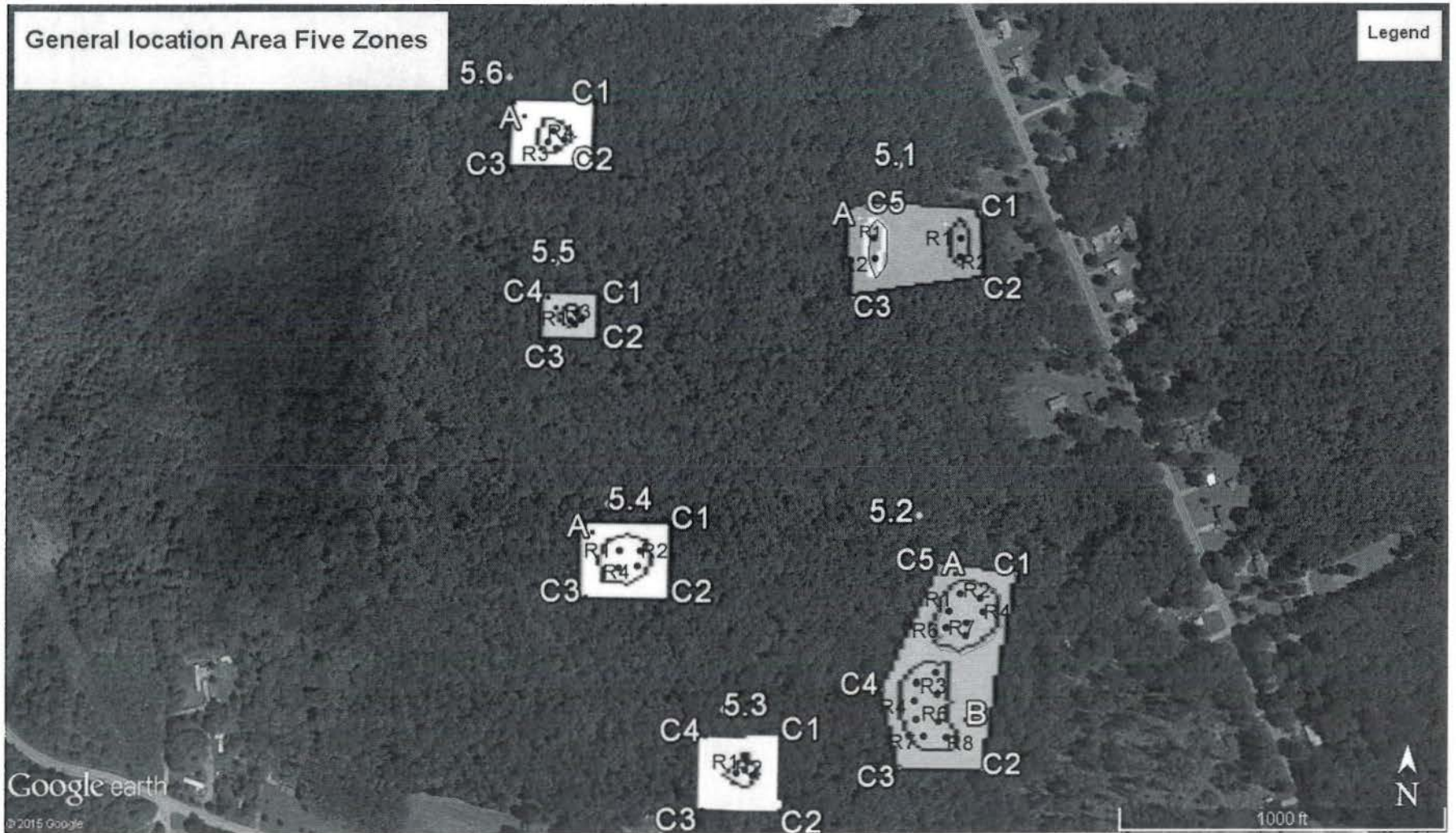


Figure 2

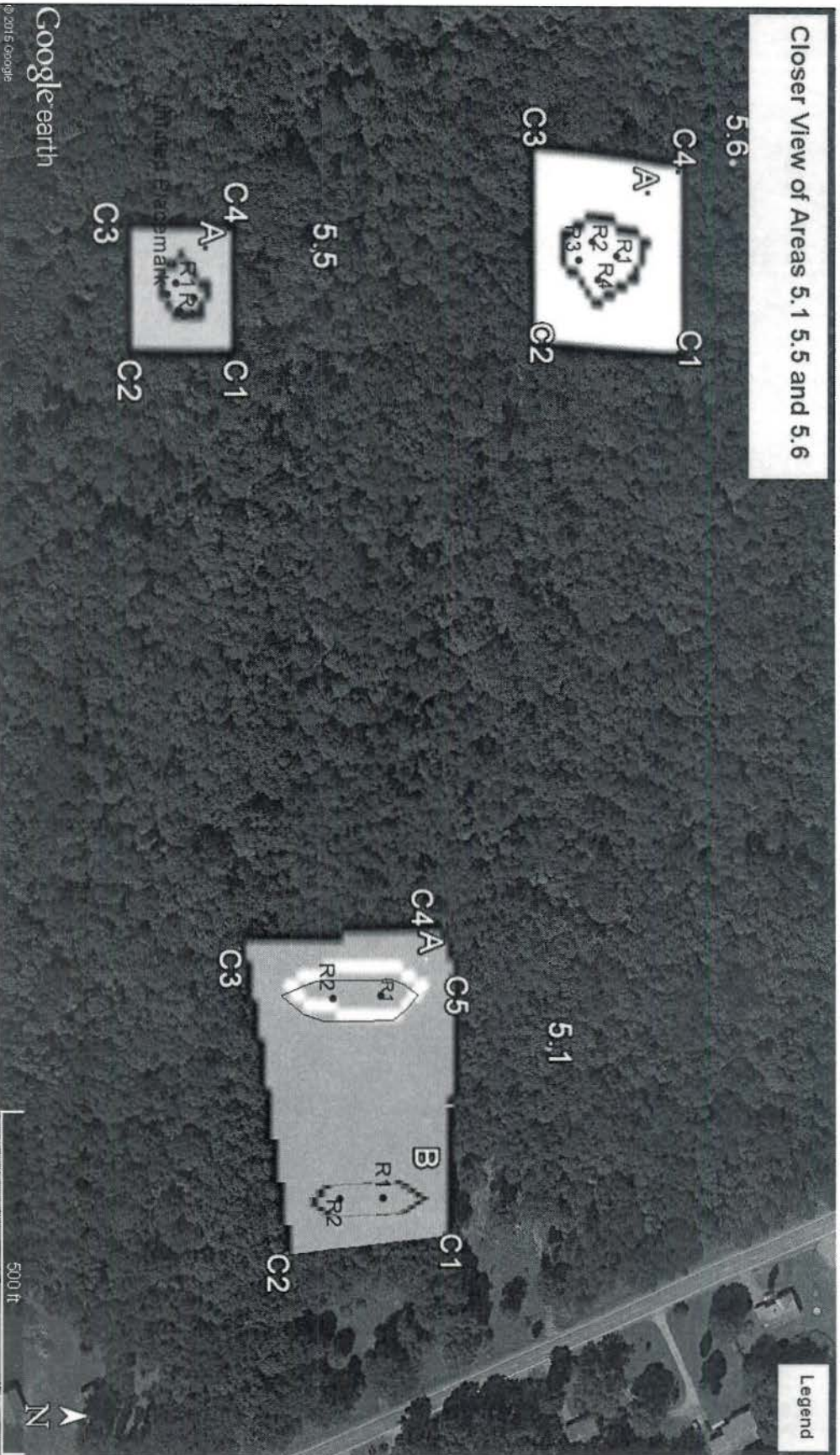


Figure 3

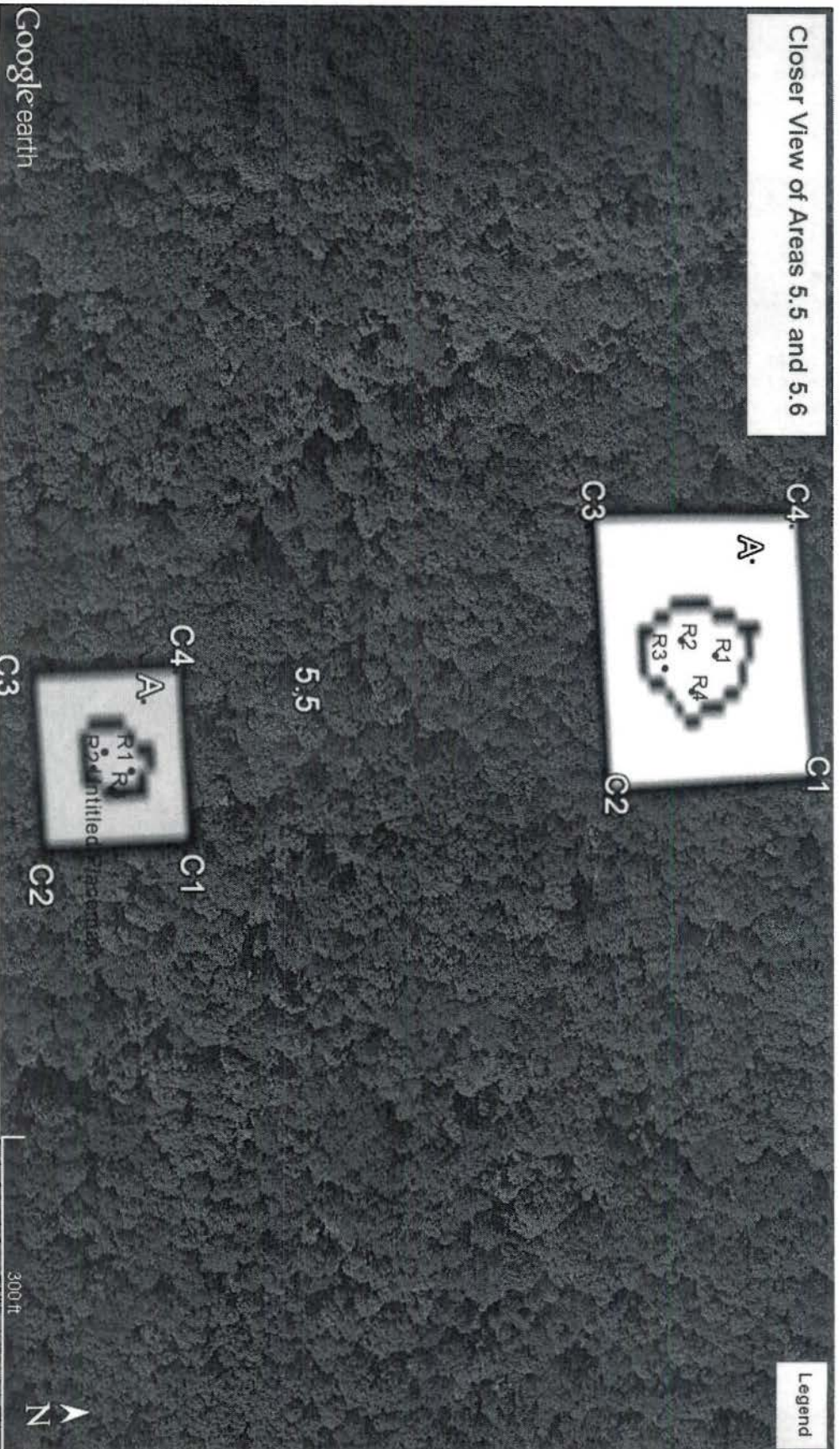


Figure 4



TABLE 1

GPS SURVEY AREA POLYGON CORNERS

Area 5.1

Corner	Latitude	Longitude
C1	42°31'19.34"N	78°58'22.83"W
C2	42°31'17.23"N	78°58'22.69"W
C3	42°31'16.60"N	78°58'28.21"W
C4	42°31'19.15"N	78°58'28.51"W
C5	42°31'19.42"N	78°58'27.70"W

TABLE 2

GPS SURVEY AREA POLYGON CORNERS

Area 5.5

Corner	Latitude	Longitude
C1	42°31'16.49"N	78°58'38.85"W
C2	42°31'15.09"N	78°58'38.83"W
C3	42°31'15.08"N	78°58'41.19"W
C4	42°31'16.50"N	78°58'41.18"W

TABLE 3

GPS SURVEY AREA POLYGON CORNERS

Area 5.6

Corner	Latitude	Longitude
C1	42°31'22.64"N	78°58'39.24"W
C2	42°31'20.50"N	78°58'39.29"W
C3	42°31'20.47"N	78°58'42.86"W
C4	42°31'22.61"N	78°58'42.82"W

3. STEP ONE - GPS SURVEY OPERATIONS (Initial as Performed)

Conduct Tailgate Safety Review.....	<u>12/16/15</u>	<u>12/17/15</u>	_____	_____
	(date)	(date)	(date)	(date)
Review survey parameters.....	<u>12/16/15</u>	<u>12/17/15</u>	_____	_____
	(date)	(date)	(date)	(date)
Verify all required tools, supplies, and equipment available.....	<u>12/16/15</u>	<u>12/17/15</u>	_____	_____
	(date)	(date)	(date)	(date)
Establish and Mark Boundaries of the GPS Survey Area Polygon.....	<u>12/16/15</u>	<u>12/17/15</u>	_____	_____
	(date)	(date)	(date)	(date)
Assemble and test GPS survey equipment.....	<u>12/16/15</u>	<u>12/17/15</u>	_____	_____
	(date)	(date)	(date)	(date)

Perform Operability Checks..... 13/12/16/15 13/12/17/15 _____
(date) (date) (date) (date)

Evaluate terrain and field conditions and select orientation of survey lines..... 13/12/16/15 13/12/17/15 _____
(date) (date) (date) (date)

Establish survey lines with nominal 30 meter spacing..... 13/12/16/15 13/12/17/15 _____
(date) (date) (date) (date)

Conduct Survey operations using best available technology (See Note 1
Below)..... 13/12/16/15 13/12/17/15 _____
(date) (date) (date) (date)

Verify all documentation complete..... 13/12/16/15 13/12/17/15 _____
(date) (date) (date) (date)

Debrief..... 13/12/16/15 13/12/17/15 _____
(date) (date) (date) (date)

Note 1:

- If possible use automated GPS data acquisition. Walk the designated lines at the ordinary pace
- If satellite signal for the Trimble GPS unit is inadequate, use the Garmin GPS unit or Cell Tower positioning to manually record GPS position and Count rates, at 5 meter intervals, along the designated lines (in accordance with established grid system).
- Alternatively establish grid lines using local coordinates system.
- If all GPS location methods are inadequate, manually log readings using measured lines at five meter intervals along the designated lines.

4. STEP TWO- STATIC RADIATION MEASUREMENTS and SOIL SAMPLING (Initial as Performed)

Conduct Tailgate Safety Review.....	<u>12/14/15</u>	<u>12/16/15</u>	<u>12/17/15</u>	_____
	(date)	(date)	(date)	(date)
Review sampling parameters	<u>12/14/15</u>	<u>12/16/15</u>	<u>12/17/15</u>	_____
	(date)	(date)	(date)	(date)
Verify all required tools, supplies, and equipment available	<u>12/14/15</u>	<u>12/16/15</u>	<u>12/17/15</u>	_____
	(date)	(date)	(date)	(date)
Prepare radiological instruments for use and perform operability checks.....	<u>12/14/15</u>	<u>12/16/15</u>	<u>12/17/15</u>	_____

	(date)	(date)	(date)	(date)
Collect Digital image(s) including location sign.....	<u>13/12/14/15</u>	<u>13/12/14/15</u>	<u>13/12/17/15</u>	_____
	(date)	(date)	(date)	(date)
Collect static radiation readings in accordance with procedure.....	<u>13/12/14/15</u>	<u>13/12/16/15</u>	<u>13/12/17/15</u>	_____
	(date)	(date)	(date)	(date)
Document relevant terrain, location, and other relevant physical features.....	<u>13/12/14/15</u>	<u>13/12/16/15</u>	<u>13/12/17/15</u>	_____
	(date)	(date)	(date)	(date)
Collect samples in accordance with procedure and sampling parameters	<u>13/12/14/15</u>	<u>13/12/16/15</u>	<u>13/12/17/15</u>	_____
	(date)	(date)	(date)	(date)
Document relevant sample features such as clay, sandy, different colors etc.	<u>13/12/14/15</u>	<u>13/12/16/15</u>	<u>13/12/17/15</u>	_____
	(date)	(date)	(date)	(date)
Verify all required samples have been collected and documentation is complete.....	<u>13/12/14/15</u>	<u>13/12/16/15</u>	<u>13/12/17/15</u>	_____
	(date)	(date)	(date)	(date)
Pack samples and equipment for transport back to vehicle(s).....	<u>13/12/14/15</u>	<u>13/12/16/15</u>	<u>13/12/17/15</u>	_____

	(date)	(date)	(date)	(date)
Transport samples and equipment to Bulk Storage Warehouse.....	<u>12/14/15</u>	<u>12/16/15</u>	<u>12/17/15</u>	_____
	(date)	(date)	(date)	(date)
Collect rinsate sample after final cleaning of the tools.....	<u>12/14/15</u>	<u>12/16/15</u>	<u>12/17/15</u>	_____
	(date)	(date)	(date)	(date)

6. COMMUNICATION PLAN

It is anticipated that there will be cellular service in the survey areas, and since these areas are not remote, no special communication requirements apply other than periodic accountability checks.

7. RELEVANT PROCEDURES AND DOCUMENTS

- RCP-02 Rev. 2, 6/1/2014 Instrument Operating Procedure Bicon MicroRem Meter
- RCP-01 Instrument Operating Procedure Ludlum 2241-2 Ratemeter/Scaler Coupled With the Ludlum 44-9 Geiger-Mueller (GM) and 44-10 2x2 NaI Detectors
 - Project Quality Assurance Project Plan (QAPP)
- NYSERDA Environmental Survey Project Procedure 1 : Soil Sample Collection and Radiological Survey Procedure
- Project Health and Safety Plan (HASP)

- RCP-03 Rev 3. 9/15/15 Performing a GPS Enhanced Overland Gamma Radiation Survey Including the Preparation and Assessment of Radiological and Geographical Data

8. Attachments and other Documents:

- Maps
- Sampling Specifications Sheets
- Sample collection forms
- Chain of Custody Forms
- Logbooks

AREA 5.1A

Date		Elevation				Coordinates	
Collected	Sample	0-15 cm	15-30 cm	30-60 cm	60-100c cm		
12-16-15	5.1A R 1 . 1	X				42°31'18.49"N	78°58'27.36"W
12-16-15	5.1A R 1 . 2		X				
12-16-15	5.1A R 1 . 3			X			
12-16-15	5.1A R 1 . 4				X		
12-16-15	5.1A R 1 . 5	X					
12-16-15	5.1A R 1 . 6				X		
12-14-15	5.1A R 2 . 1	X				42°31'17.85"N	78°58'27.30"W
12-14-15	5.1A R 2 . 2		X				

AREA 5.1B

Date		Elevation				Coordinates	
Collected	Sample	0-15 cm	15-30 cm	30-60 cm	60-100c cm		
12-14-15	5.1B R 1 . 1	X				42°31'18.51"N	78°58'23.66"W
12-14-15	5.1B R 1 . 2		X				
12-14-15	5.1B R 2 . 1	X				42°31'17.94"N	78°58'23.68"W
12-14-15	5.1B R 2 . 2		X				

AREA 5.5A

Date							Elevation				Coordinates	
Collected	Sample					0-15 cm	15-30 cm	30-60 cm	60-100c cm			
12/17/15	5.5A	R	1	.	1	X				42°31'16.03"N	78°58'39.95"W	
12/17/15	5.5A	R	1	.	2		X					
12/17/15	5.5A	R	1	.	3			X				
12/17/15	5.5A	R	1	.	4				X			
12/17/15	5.5A	R	1	.	5	X						
12/17/15	5.5A	R	1	.	6				X			
12-14-15	5.5A	R	2	.	1	X				42°31'15.80"N	78°58'40.20"W	
12-14-15	5.5A	R	2	.	2		X					
12-14-15	5.5A	R	3	.	1	X				42°31'15.84"N	78°58'39.72"W	
12-14-15	5.5A	R	3	.	2		X					
12-14-15	5.5A	R	4	.	1	X				42°31'15.68"N	78°58'40.00"W	
12-14-15	5.5A	R	4	.	2		X					

AREA 5.6A

Date						Elevation				Coordinates	
Collected	Sample					0-15 cm	15-30 cm	30-60 cm	60-100c cm		
12/17/15	5.6A	R	1	.	1	X				42°31'21.72"N	78°58'41.08"W
12/17/15	5.6A	R	1	.	2		X				
12/17/15	5.6A	R	1	.	3			X			
12/17/15	5.6A	R	1	.	4				X		
12/17/15	5.6A	R	1	.	5	X					
12/17/15	5.6A	R	1	.	6				X		
12-14-15	5.6A	R	2	.	1	X				42°31'21.37"N	78°58'41.30"W
12-14-15	5.6A	R	2	.	2		X				
12-14-15	5.6A	R	3	.	1	X				42°31'21.18"N	78°58'40.94"W
12-14-15	5.6A	R	3	.	2		X				
12-14-15	5.6A	R	4	.	1	X				42°31'21.45"N	78°58'40.61"W
12-14-15	5.6A	R	4	.	2		X				

Survey Area 5.2, 5.3 and 5.4

Survey and Sampling

Field Guide

1. INTRODUCTION AND PURPOSE

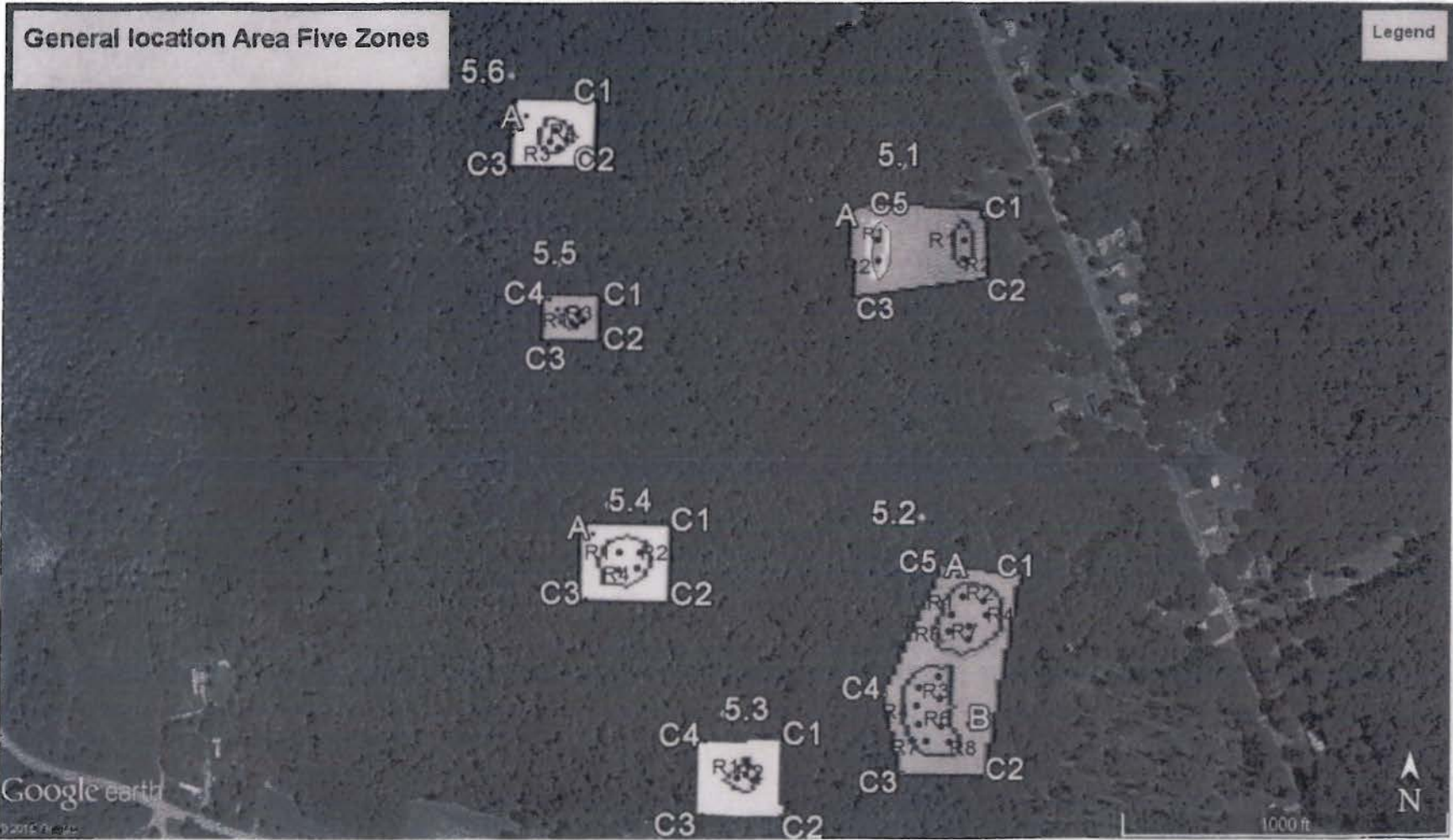
The purpose of this survey and sampling field guide (SSFG) is to:

- Present the survey and sampling parameters and objectives directly pertinent to Survey areas 5.2, 5.2, and 5.4.
- Ensure all pertinent information and documentation is recorded.
- Guide the survey and sampling team through the survey and sampling process.

2. GENERAL DESCRIPTION OF THE SURVEY AREAS

Survey areas 5.1 through 5.6 are located on the Seneca Nation of Indians in the general vicinity of 12283 4 Mile Level Road). The survey area is wooded. Figure 1 shows the general area of the Area 5 survey areas. Figure 2 provides a closer view of Areas 5.2, 5.3, and 5.4 The shaded polygon delineates the areas to be GPS surveyed, while the irregular shapes represent the primary areas to be sampled. If elevated areas are detected by the GPS survey that are outside of the existing sampling zones, samples may be collected at these elevated areas as well. Tables 1,2 and 3 provide the GPS coordinates for the GPS Survey Polygons.

Figure 1
General View of Area 5 Survey Areas



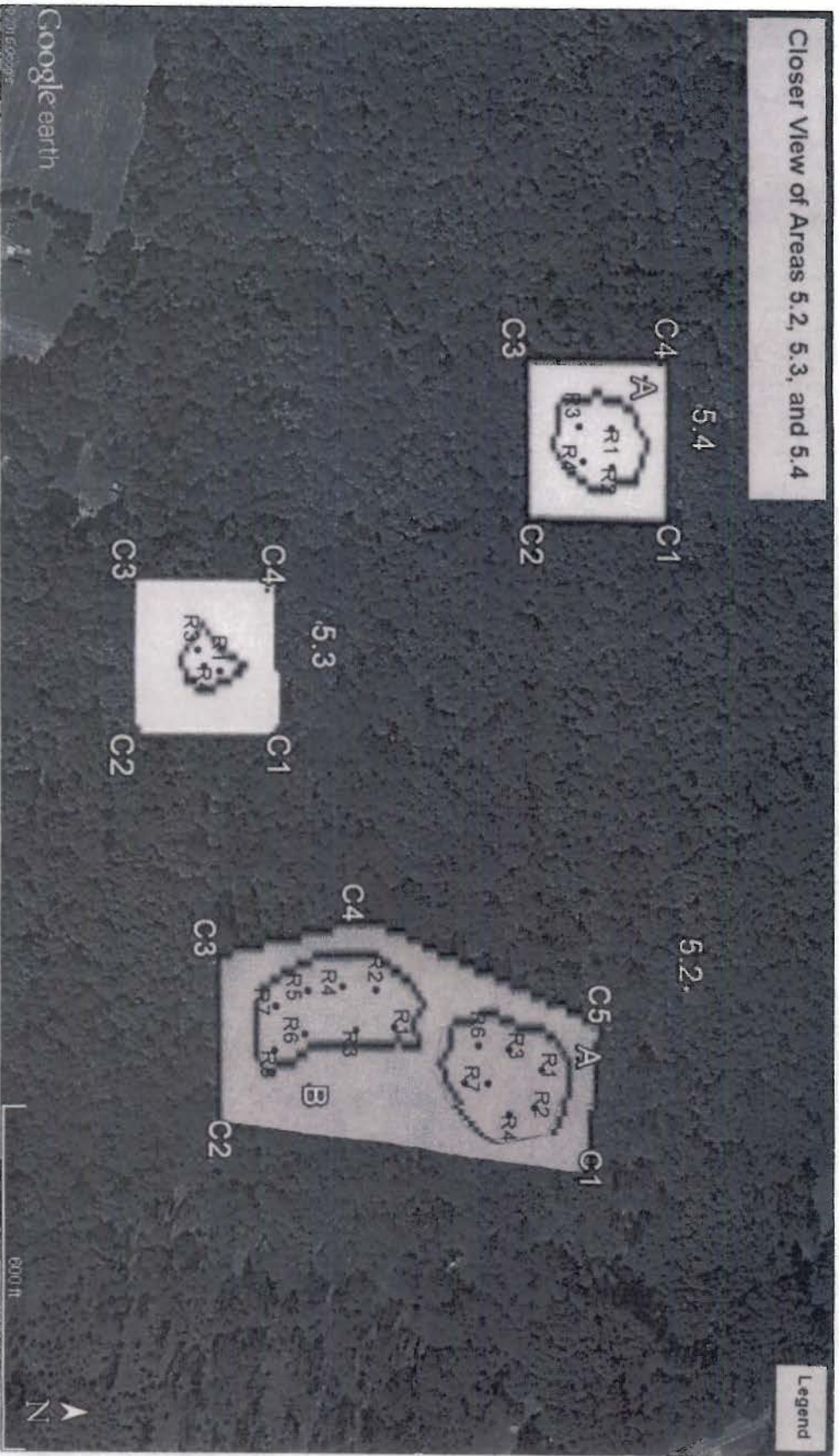


Figure 2

TABLE 1

GPS SURVEY AREA POLYGON CORNERS

Area 5.2

Corner	Latitude	Longitude
C1	42°31'8.10"N	78°58'21.14"W
C2	42°31'2.05"N	78°58'22.40"W
C3	42°31'2.05"N	78°58'25.88"W
C4	42°31'4.46"N	78°58'26.68"W
C5	42°31'8.32"N	78°58'24.36"W

TABLE 2

GPS SURVEY AREA POLYGON CORNERS

Area 5.3

Corner	Latitude	Longitude
C1	42°31'2.99"N	78°58'30.94"W
C2	42°31'0.75"N	78°58'30.94"W
C3	42°31'0.77"N	78°58'34.25"W
C4	42°31'2.91"N	78°58'34.18"W

TABLE 3
GPS SURVEY AREA POLYGON CORNERS
Area 5.4

Corner	Latitude	Longitude
C1	42°31'9.47"N	78°58'35.79"W
C2	42°31'7.18"N	78°58'35.73"W
C3	42°31'7.16"N	78°58'39.36"W
C4	42°31'9.42"N	78°58'39.43"W
C5	42°31'9.42"N	78°58'39.43"W

3. STEP ONE - GPS SURVEY OPERATIONS (Initial as Performed)

Conduct Tailgate Safety Review.....	<u>12/14/15</u>	<u>12/15/15</u>	_____	_____
	(date)	(date)	(date)	(date)
Review survey parameters.....	<u>12/14/15</u>	<u>12/15/15</u>	_____	_____
	(date)	(date)	(date)	(date)
Verify all required tools, supplies, and equipment available.....	<u>12/14/15</u>	<u>12/15/15</u>	_____	_____
	(date)	(date)	(date)	(date)
Establish and Mark Boundaries of the GPS Survey Area Polygon.....	<u>12/14/15</u>	<u>12/15/15</u>	_____	_____
	(date)	(date)	(date)	(date)
Assemble and test GPS survey equipment.....	<u>12/14/15</u>	<u>12/15/15</u>	_____	_____
	(date)	(date)	(date)	(date)

Perform Operability Checks.....	<u>13/12/14/15</u>	<u>13/12/15/15</u>	_____	_____
	(date)	(date)	(date)	(date)
Evaluate terrain and field conditions and select orientation of survey lines.....	<u>13/12/14/15</u>	<u>13/12/15/15</u>	_____	_____
	(date)	(date)	(date)	(date)
Establish survey lines with nominal 30 meter spacing.....	<u>13/12/14/15</u>	<u>13/12/15/15</u>	_____	_____
	(date)	(date)	(date)	(date)
Conduct Survey operations using best available technology (See Note 1 Below).....	<u>13/12/14/15</u>	<u>13/12/15/15</u>	_____	_____
	(date)	(date)	(date)	(date)
Verify all documentation complete.....	<u>13/12/14/15</u>	<u>13/12/15/15</u>	_____	_____
	(date)	(date)	(date)	(date)
Debrief.....	<u>13/12/15/15</u>	<u>13/12/15/15</u>	_____	_____
	(date)	(date)	(date)	(date)

Note 1:

- If possible use automated GPS data acquisition. Walk the designated lines at the ordinary pace
- If satellite signal for the Trimble GPS unit is inadequate, use the Garmin GPS unit or Cell Tower positioning to manually record GPS position and Count rates, at 5 meter intervals, along the designated lines (in accordance with established grid system).
- Alternatively establish grid lines using local coordinates system.
- If all GPS location methods are inadequate, manually log readings using measured lines at five meter intervals along the designated lines.

4. STEP TWO- STATIC RADIATION MEASUREMENTS and SOIL SAMPLING (Initial as Performed)

Conduct Tailgate Safety Review.....	<u>12/11/15</u>	<u>12/14/15</u>	<u>12/15/15</u>	<u>12/16/15</u>
	(date)	(date)	(date)	(date)
Review sampling parameters	<u>12/11/15</u>	<u>12/14/15</u>	<u>12/15/15</u>	<u>12/16/15</u>
	(date)	(date)	(date)	(date)
Verify all required tools, supplies, and equipment available	<u>12/11/15</u>	<u>12/14/15</u>	<u>12/15/15</u>	<u>12/16/15</u>
	(date)	(date)	(date)	(date)
Prepare radiological instruments for use and perform operability checks.....	<u>12/11/15</u>	<u>12/14/15</u>	<u>12/15/15</u>	<u>12/16/15</u>

	(date)	(date)	(date)	(date)
Collect Digital image(s) including location sign.....	<u>13/12/11/15</u>	<u>13/12/14/15</u>	<u>13/12/15/15</u>	<u>13/12/16/15</u>
	(date)	(date)	(date)	(date)
Collect static radiation readings in accordance with procedure.....	<u>13/12/11/15</u>	<u>13/12/14/15</u>	<u>13/12/15/15</u>	<u>13/12/16/15</u>
	(date)	(date)	(date)	(date)
Document relevant terrain, location, and other relevant physical features.....	<u>13/12/11/15</u>	<u>13/12/14/15</u>	<u>13/12/15/15</u>	<u>13/12/16/15</u>
	(date)	(date)	(date)	(date)
Collect samples in accordance with procedure and sampling parameters	<u>13/12/11/15</u>	<u>13/12/14/15</u>	<u>13/12/15/15</u>	<u>13/12/16/15</u>
	(date)	(date)	(date)	(date)
Document relevant sample features such as clay, sandy, different colors etc.	<u>13/12/11/15</u>	<u>13/12/14/15</u>	<u>13/12/15/15</u>	<u>13/12/16/15</u>
	(date)	(date)	(date)	(date)
Verify all required samples have been collected and documentation is complete	<u>13/12/11/15</u>	<u>13/12/14/15</u>	<u>13/12/15/15</u>	<u>13/12/16/15</u>
	(date)	(date)	(date)	(date)
Pack samples and equipment for transport back to vehicle(s).....	<u>13/12/11/15</u>	<u>13/12/14/15</u>	<u>13/12/15/15</u>	<u>13/12/16/15</u>

	(date)	(date)	(date)	(date)
Transport samples and equipment to Bulk Storage Warehouse.....	<u>JB 12/11/15</u>	<u>JB 12/14/15</u>	<u>JB 12/15/15</u>	<u>JB 12/16/15</u>
	(date)	(date)	(date)	(date)
Collect rinsate sample after final cleaning of the tools.....	<u>JB 12/11/15</u>	<u>JB 12/14/15</u>	<u>JB 12/15/15</u>	<u>JB 12/16/15</u>
	(date)	(date)	(date)	(date)

6. COMMUNICATION PLAN

It is anticipated that there will be cellular service in the survey areas, and since these areas are not remote, no special communication requirements apply other than periodic accountability checks.

7. RELEVANT PROCEDURES AND DOCUMENTS

- RCP-02 Rev. 2, 6/1/2014 Instrument Operating Procedure Bicon MicroRem Meter
- RCP-01 Instrument Operating Procedure Ludlum 2241-2 Ratemeter/Scaler Coupled With the Ludlum 44-9 Geiger-Mueller (GM) and 44-10 2x2 NaI Detectors
 - Project Quality Assurance Project Plan (QAPP)
- NYSERDA Environmental Survey Project Procedure 1 : Soil Sample Collection and Radiological Survey Procedure
- Project Health and Safety Plan (HASP)

- RCP-03 Rev 3. 9/15/15 Performing a GPS Enhanced Overland Gamma Radiation Survey Including the Preparation and Assessment of Radiological and Geographical Data

8. Attachments and other Documents:

- Maps
- Sampling Specifications Sheets
- Sample collection forms
- Chain of Custody Forms
- Logbooks

AREA 5.2B

Date Collected	Sample				Elevation				Coordinates
					0-15 cm	15-30 cm	30-60 cm	60-100c cm	
12/15/15	5.2B	R	1	1	X				
12/15/15	5.2B	R	1	2		X			
12/15/15	5.2B	R	1	3			X		
12/15/15	5.2B	R	1	4				X	
12/15/15	5.2B	R	2	1	X				
12/15/15	5.2B	R	2	2		X			
12/15/15	5.2B	R	2	3			X		
12/15/15	5.2B	R	2	4				X	
12/15/15	5.2B	R	2	5	X				
12/15/15	5.2B	R	2	6			X		
12/11/15	5.2B	R	3	5	X				
12/11/15	5.2B	R	3	2		X			
12/11/15	5.2B	R	4	1	X				
12/11/15	5.2B	R	4	2		X			
12/11/15	5.2B	R	5	1	X				
12/11/15	5.2B	R	5	2		X			
12/11/15	5.2B	R	6	1	X				
12/11/15	5.2B	R	6	2		X			
12/11/15	5.2B	R	7	1	X				
12/11/15	5.2B	R	7	2		X			
12/11/15	5.2B	R	8	1	X				
12/11/15	5.2B	R	8	2		X			

Seneca Nation of Indians

Background

Survey and Sampling

Field Guide

1. INTRODUCTION AND PURPOSE

The purpose of this survey and sampling field guide (SSFG) is to:

- Present the survey and sampling parameters and objectives directly pertinent to sampling designated background locations on Seneca Nation of Indians (SNI).
- Ensure all pertinent information is collected.
- Guide the survey and sampling team through the survey and sampling process.

2. GENERAL DESCRIPTION OF THE SURVEY Point Locations

The background survey and sampling will be conducted in 10 locations which are labeled B-18 to B-27 in Figure 1 below. Table 1 provides the GPS coordinates for each sampling point. Five of the points are located on the flood plain while the other five are not.

Figure 1

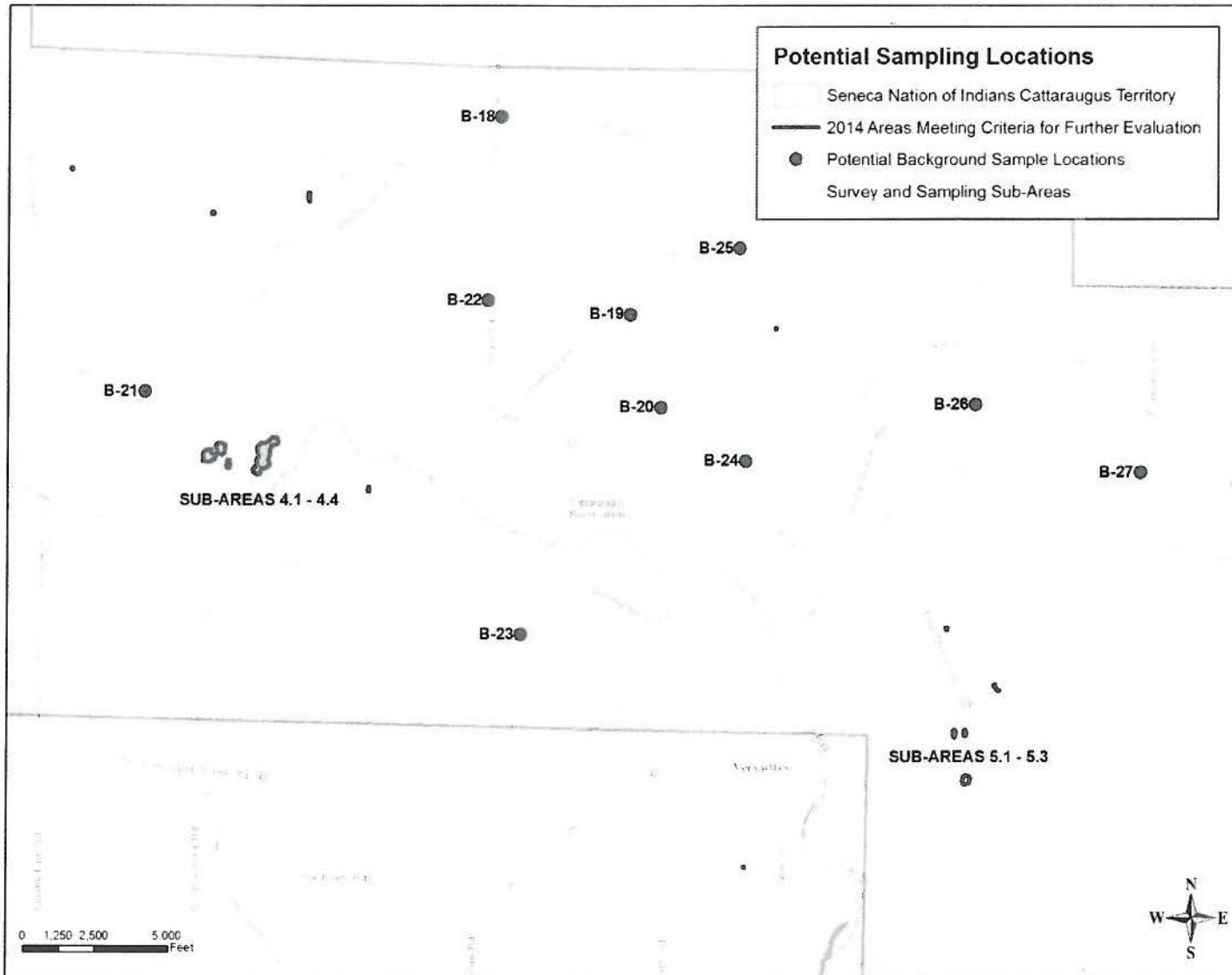


TABLE 1
Sampling Location Coordinates

Point ID	Latitude	Longitude
<i>Floodplain</i>		
B-19	42°33'00.84" N	79°00'18.18" W
B-20	42°32'38.08" N	79°00'08.02" W
B-21	42°32'41.83" N	79°03'03.50" W
B-22	42°33'04.29" N	79°01'06.60" W
B-24	42°32'24.74" N	78°59'38.81" W
<i>Non Floodplain</i>		
B-18	Pending	Pending
B-23	Pending	Pending
B-25	Pending	Pending
B-26	Pending	Pending
B-27	Pending	Pending

11/18/15
SNI BKL6 *[Signature]*

3. STATIC RADIATION MEASUREMENTS and SOIL SAMPLING (Initial as Performed)

Conduct Tailgate Safety Review.....	TB 11/19	_____	_____	_____
	(date)	(date)	(date)	(date)
Review sampling parameters	TB 11/19	_____	_____	_____
	(date)	(date)	(date)	(date)
Verify all required tools, supplies, and equipment available	TB 11/19	_____	_____	_____
	(date)	(date)	(date)	(date)
Prepare radiological instruments for use and perform operability checks.....	TB 11/19	_____	_____	_____
	(date)	(date)	(date)	(date)
Collect Digital image(s) including location sign.....	TB 11/19	_____	_____	_____
	(date)	(date)	(date)	(date)
Collect static radiation readings in accordance with procedure.....	TB 11/19	_____	_____	_____
	(date)	(date)	(date)	(date)
Document relevant terrain, location, and other relevant physical features.....	TB 11/19	_____	_____	_____

11/18/15

SNI BK6

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

Collect samples in accordance with procedure and sampling parameters TB 11/19 _____

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

Document relevant sample features such as clay, sandy, different colors etc. TB 11/19 _____

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

Verify all required samples have been collected and documentation is complete TB 11/19 _____

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

Pack samples and equipment for transport back to vehicle(s)..... TB 11/19 _____

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

Transport samples and equipment to Bulk Storage Warehouse..... TB 11/19 _____

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

SNI BK6

11/18/15

Collect rinsate sample after final cleaning of the tools..... TB 11/19
(date) (date) (date) (date)

6. COMMUNICATION PLAN

It is anticipated that there will be cellular service in the survey areas, and since these areas are not remote, no special communication requirements apply other than periodic accountability checks.

7. RELEVANT PROCEDURES AND DOCUMENTS

- RCP-02 Rev. 2, 6/1/2014 Instrument Operating Procedure Bicron MicroRem Meter
- RCP-01 Instrument Operating Procedure Ludlum 2241-2 Ratemeter/Scaler Coupled With the Ludlum 44-9 Geiger-Mueller (GM) and 44-10 2x2 NaI Detectors
- Project Quality Assurance Project Plan (QAPP)
 - NYSERDA Environmental Survey Project Procedure 1 : Soil Sample Collection and Radiological Survey Procedure
- Project Health and Safety Plan (HASP)

Attachments and other Documents:

- Maps
- Sampling Specifications Sheets
- Sample collection forms
- Chain of Custody Forms
- Logbooks

SNE
BK6

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3. STEP ONE - GPS SURVEY OPERATIONS (Initial as Performed)

Conduct Tailgate Safety Review.....	TB 11/18	TB 11/19	_____	_____
	(date)	(date)	(date)	(date)
Review survey parameters.....	TB 11/18	TB 11/19	_____	_____
	(date)	(date)	(date)	(date)
Verify all required tools, supplies, and equipment available.....	TB 11/18	TB 11/19	_____	_____
	(date)	(date)	(date)	(date)
Establish and Mark Boundaries of the GPS Survey Area Polygon.....	TB 11/18	TB N/A	_____	_____
	(date)	(date)	(date)	(date)
Assemble and test GPS survey equipment.....	TB 11/18	TB 11/19	_____	_____
	(date)	(date)	(date)	(date)

SNIRK6

Perform Operability Checks.....	TB 4/18	TB 4/19	_____	_____
	(date)	(date)	(date)	(date)
Evaluate terrain and field conditions and select orientation of survey lines.....	TB 4/18	N/A	_____	_____
	(date)	(date)	(date)	(date)
Establish survey lines with nominal 30 meter spacing.....	TB 4/18	N/A	_____	_____
	(date)	(date)	(date)	(date)
Conduct Survey operations using best available technology (See Note 1 Below).....	TB 4/18	TB 4/19	_____	_____
	(date)	(date)	(date)	(date)
Verify all documentation complete.....	TB 4/18	TB 4/19	_____	_____
	(date)	(date)	(date)	(date)
Debrief.....	TB 4/18	TB 4/19	_____	_____
	(date)	(date)	(date)	(date)

SNI DKK

Note 1:

- If possible use automated GPS data acquisition. Walk the designated lines at the ordinary pace
- If satellite signal for the Trimble GPS unit is inadequate, use the Garmin GPS unit or Cell Tower positioning to manually record GPS position and Count rates, at 5 meter intervals, along the designated lines (in accordance with established grid system).
- If all GPS location methods are inadequate, manually log readings using measured lines at five meter intervals along the designated lines.

4. STEP TWO- STATIC RADIATION MEASUREMENTS and SOIL SAMPLING (Initial as Performed)

Conduct Tailgate Safety Review.....	<u>TB 11/18</u>	<u>TB 11/19</u>	_____	_____
	(date)	(date)	(date)	(date)
Review sampling parameters	<u>TB 11/18</u>	<u>TB 11/19</u>	_____	_____
	(date)	(date)	(date)	(date)
Verify all required tools, supplies, and equipment available	<u>TB 11/18</u>	<u>TB 11/19</u>	_____	_____
	(date)	(date)	(date)	(date)
Prepare radiological instruments for use and perform operability checks.....	<u>TB 11/18</u>	<u>TB 11/19</u>	_____	_____
	(date)	(date)	(date)	(date)

SNI BKG

Collect Digital image(s) including location sign.....	<u>TB 11/18</u>	<u>TB 11/19</u>	_____	_____
	(date)	(date)	(date)	(date)
Collect static radiation readings in accordance with procedure.....	<u>TB 11/18</u>	<u>TB 11/19</u>	_____	_____
	(date)	(date)	(date)	(date)
Document relevant terrain, location, and other relevant physical features.....	<u>TB 11/18</u>	<u>TB 11/19</u>	_____	_____
	(date)	(date)	(date)	(date)
Collect samples in accordance with procedure and sampling parameters	<u>TB 11/18</u>	<u>TB 11/19</u>	_____	_____
	(date)	(date)	(date)	(date)
Document relevant sample features such as clay, sandy, different colors etc.	<u>TB 11/18</u>	<u>TB 11/19</u>	_____	_____
	(date)	(date)	(date)	(date)
Verify all required samples have been collected and documentation is complete	<u>TB 11/18</u>	<u>TB 11/19</u>	_____	_____
	(date)	(date)	(date)	(date)
Pack samples and equipment for transport back to vehicle(s).....	<u>TB 11/18</u>	<u>TB 11/19</u>	_____	_____
	(date)	(date)	(date)	(date)

Transport samples and equipment to Bulk Storage Warehouse.....	<u>TB 11/18</u>	<u>TB 11/19</u>	_____	_____
	(date)	(date)	(date)	(date)
Collect rinsate sample after final cleaning of the tools.....	<u>TB 11/14</u>	<u>TB 11/17</u>	_____	_____
	(date)	(date)	(date)	(date)

6. COMMUNICATION PLAN

It is anticipated that there will be cellular service in the survey areas, and since these areas are not remote, no special communication requirements apply other than periodic accountability checks.

7. RELEVANT PROCEDURES AND DOCUMENTS

- RCP-02 Rev. 2, 6/1/2014 Instrument Operating Procedure Bicon MicroRem Meter
- RCP-01 Instrument Operating Procedure Ludlum 2241-2 Ratemeter/Scaler Coupled With the Ludlum 44-9 Geiger-Mueller (GM) and 44-10 2x2 NaI Detectors
 - Project Quality Assurance Project Plan (QAPP)
- NYSERDA Environmental Survey Project Procedure 1 : Soil Sample Collection and Radiological Survey Procedure
- Project Health and Safety Plan (HASP)
 - RCP-03 Rev 3. 9/15/15 Performing a GPS Enhanced Overland Gamma Radiation Survey Including the Preparation and Assessment of Radiological and Geographical Data

SNI Background Sampling Table

Date Collected	Sample		Elevation				Coordinates	
			0-15 cm	15-30 cm	30-60 cm	60-100c cm		
12-15-15	SNIB18	1	X				42°33'48.61" N	79°01'02.18" W
12-15-15	SNIB18	2		X			42°33'51" N	79°01'15" W
12-2-15	SNIB19	1	X				42°33'00.84" N	79°00'18.18" W
12-2-15	SNIB19	2		X				
12-2-15	SNIB19	3			X			
11-24-15	SNIB20	1	X				42°32'38.08" N	79°00'08.02" W
11-24-15	SNIB20	2		X				
11-24-15	SNIB20	3			X			
11-19-15	SNIB21	1	X				42°32'41.83" N	79°03'03.50" W
11-19-15	SNIB21	2		X				
11-19-15	SNIB21	3			X			
11-19-15	SNIB21	4				X		
11-19-15	SNIB21	5	X					
11-19-15	SNIB21	6		X				
12-2-15	SNIB22	1	X				42°33'04.29" N	79°01'06.60" W
12-2-15	SNIB22	2		X				
12-10-15	SNIB23	1	X				42°31'41.85" N	79°00'56.27" W
12-10-15	SNIB23	2		X			42°31'41.7" N	79°00'55.9" W
12-10-15	SNIB23	3			X			
12-10-15	SNIB23	4				X		
12-10-15	SNIB23	5	X					
12-10-15	SNIB23	6		X				
11-19-15	SNIB24	1	¹¹⁻²⁴⁻¹⁵ X				42°32'24.74" N	78°59'38.81" W
11-19-15	SNIB24	2		¹¹⁻²⁴ X			42°32'13.8" N	78°59'13.7" W
11-19-15	SNIB24	3			¹¹⁻²⁴⁻¹⁵ X			
12-10-15	SNIB25	1	X				42°32'16.18" N	
12-10-15	SNIB25	2		X			42°33'16.97" N	78°59'41.62" W
12-10-15	SNIB25	3			X			
12-10-15	SNIB26	1	X					
12-10-15	SNIB26	2		X			42°32'38.91" N	78°58'28.21" W
12-10-15	SNIB26	3			X			
12-10-15	SNIB27	1	X				42°32'22.41" N	78°57'24.92" W
12-10-15	SNIB27	2		X				
12-10-15	SNIB27	3			X			

TB
12/15

TB
11/24
NEW

TB
12/10
used

NEW