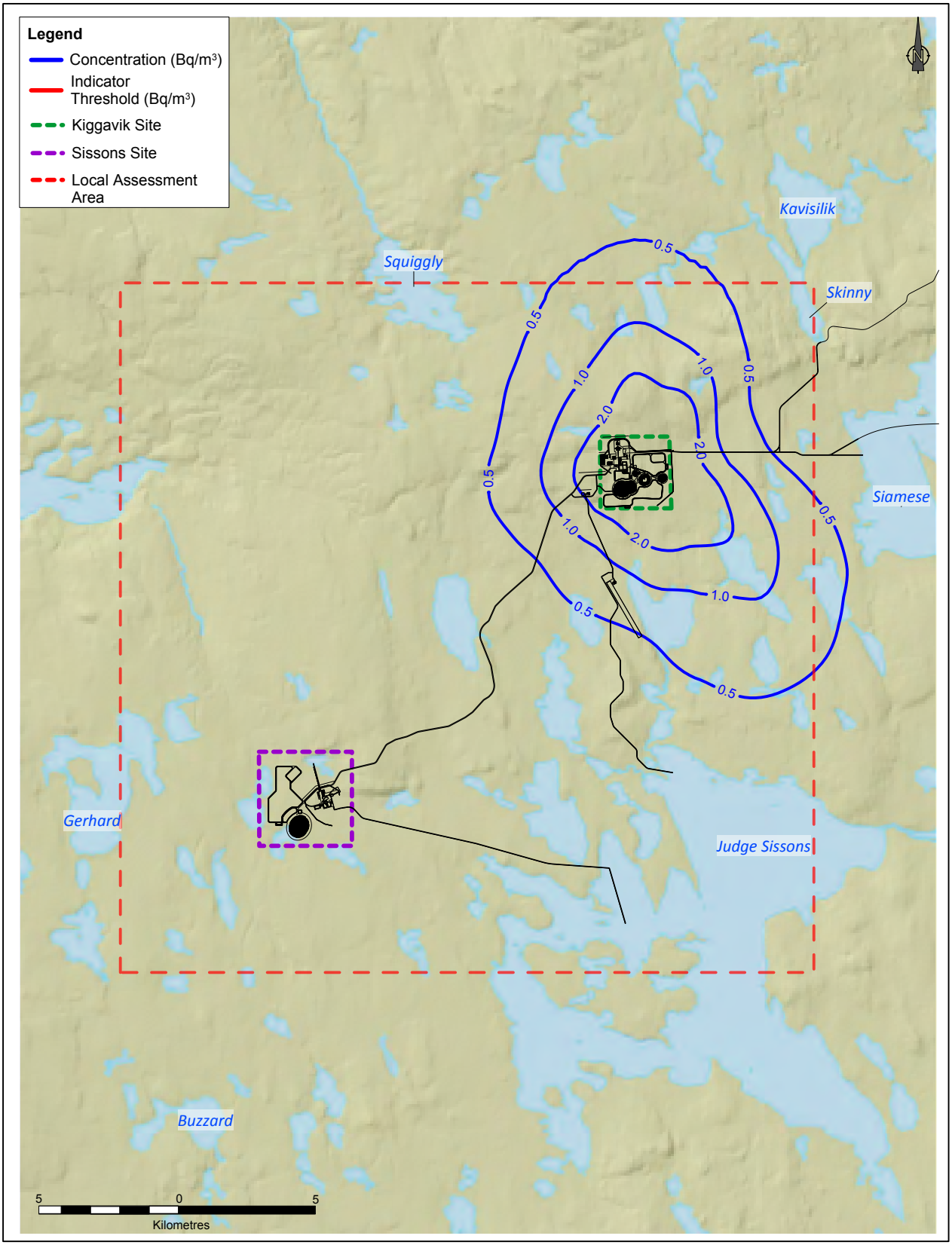

Projection: NAD 1983 UTM Zone 14N
Compiled: SENES Consultants
Date: 05/05/2014
Data Sources: *Natural Resources Canada, Geobase®, Nation Topographic Database, AREVA Resources Canada Inc.*

FIGURE 6.1-21
Operation Assessment - Phase 1
Incremental Annual Radon Concentration (Bq/m³)

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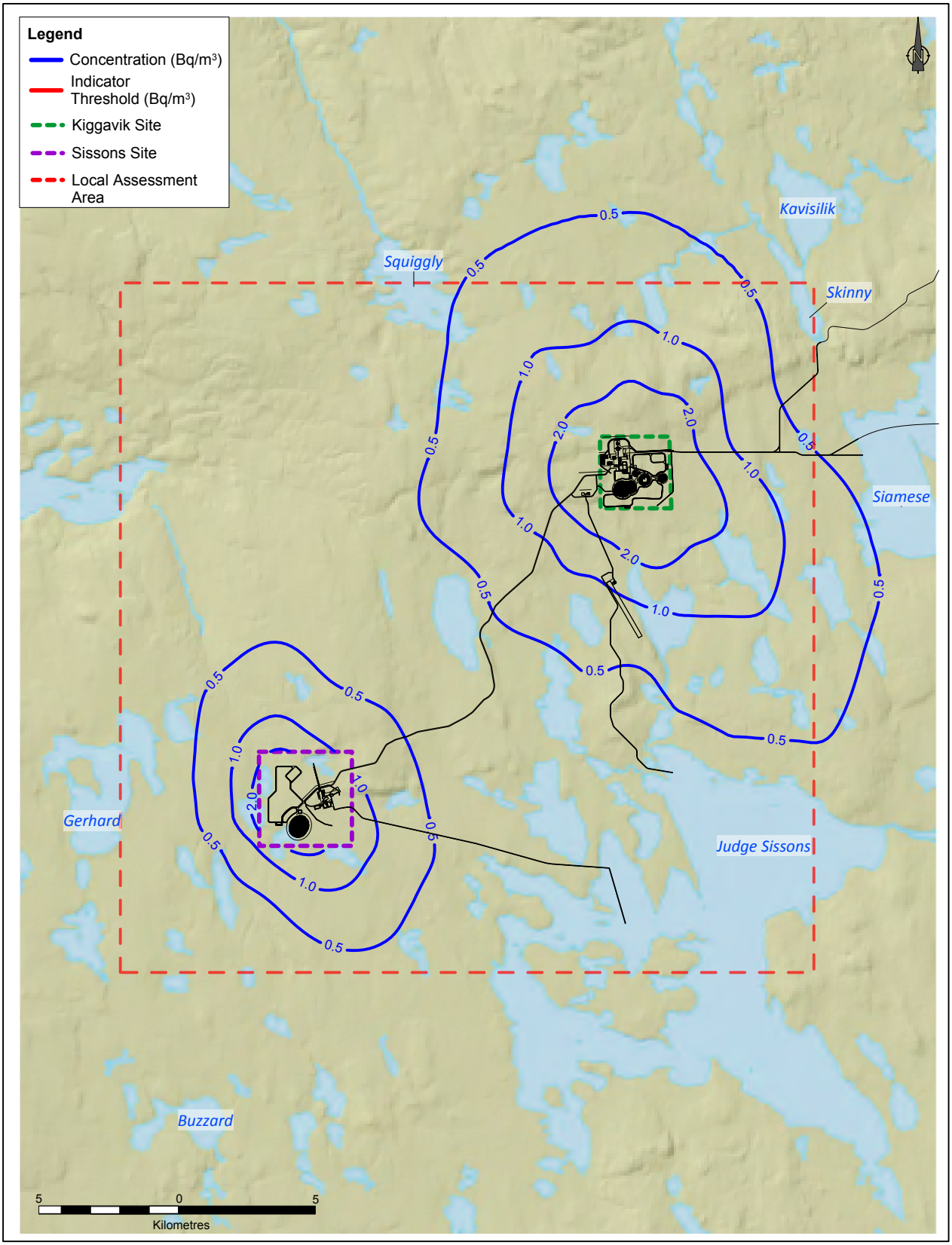

Projection: NAD 1983 UTM Zone 14N
Compiled: SENES Consultants
Date: 05/05/2014
Data Sources: *Natural Resources Canada, Geobase®, Nation Topographic Database, AREVA Resources Canada Inc.*

FIGURE 6.1-22
Operation Assessment - Phase 2
Incremental Annual Radon Concentration (Bq/m³)
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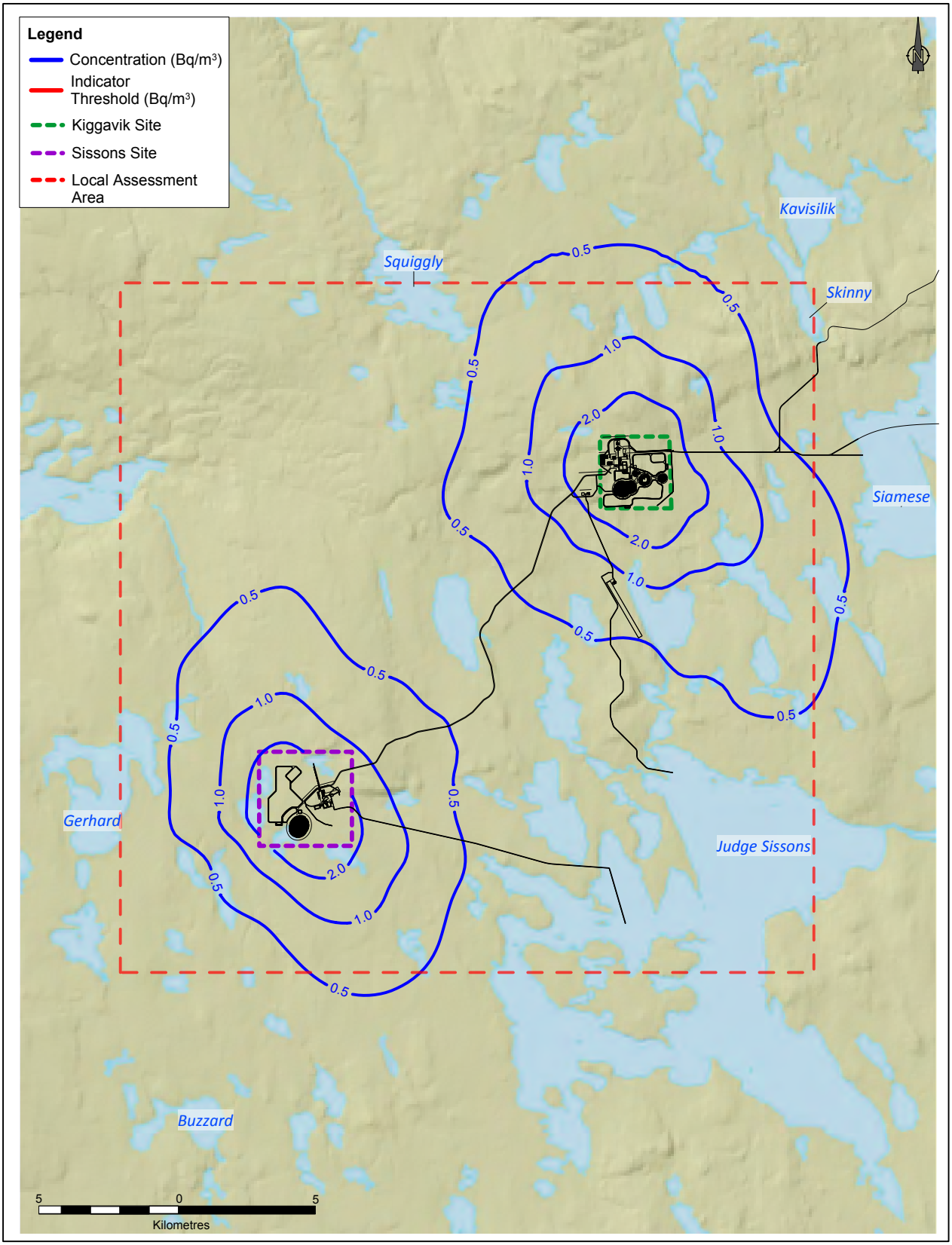

Projection: NAD 1983 UTM Zone 14N
Compiled: SENES Consultants
Date: 05/05/2014
Data Sources: *Natural Resources Canada, Geobase®, Nation Topographic Database, AREVA Resources Canada Inc.*

FIGURE 6.1-23
Operation Assessment - Phase 3
Incremental Annual Radon Concentration (Bq/m³)
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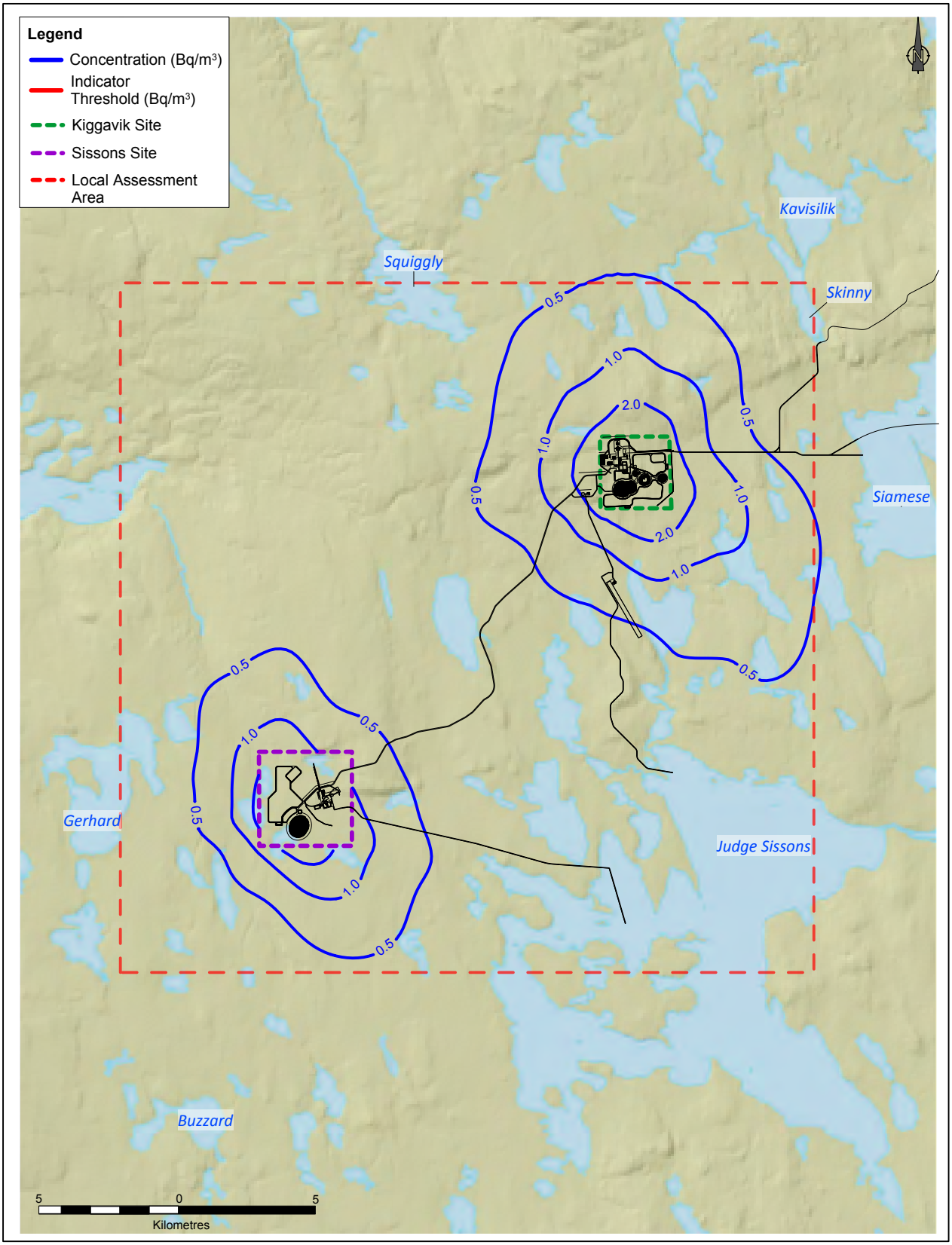

Projection: NAD 1983 UTM Zone 14N
Compiled: SENES Consultants
Date: 05/05/2014
Data Sources: *Natural Resources Canada, Geobase®, Nation Topographic Database, AREVA Resources Canada Inc.*

FIGURE 6.1-24
Operation Assessment - Phase 4
Incremental Annual Radon Concentration (Bq/m³)

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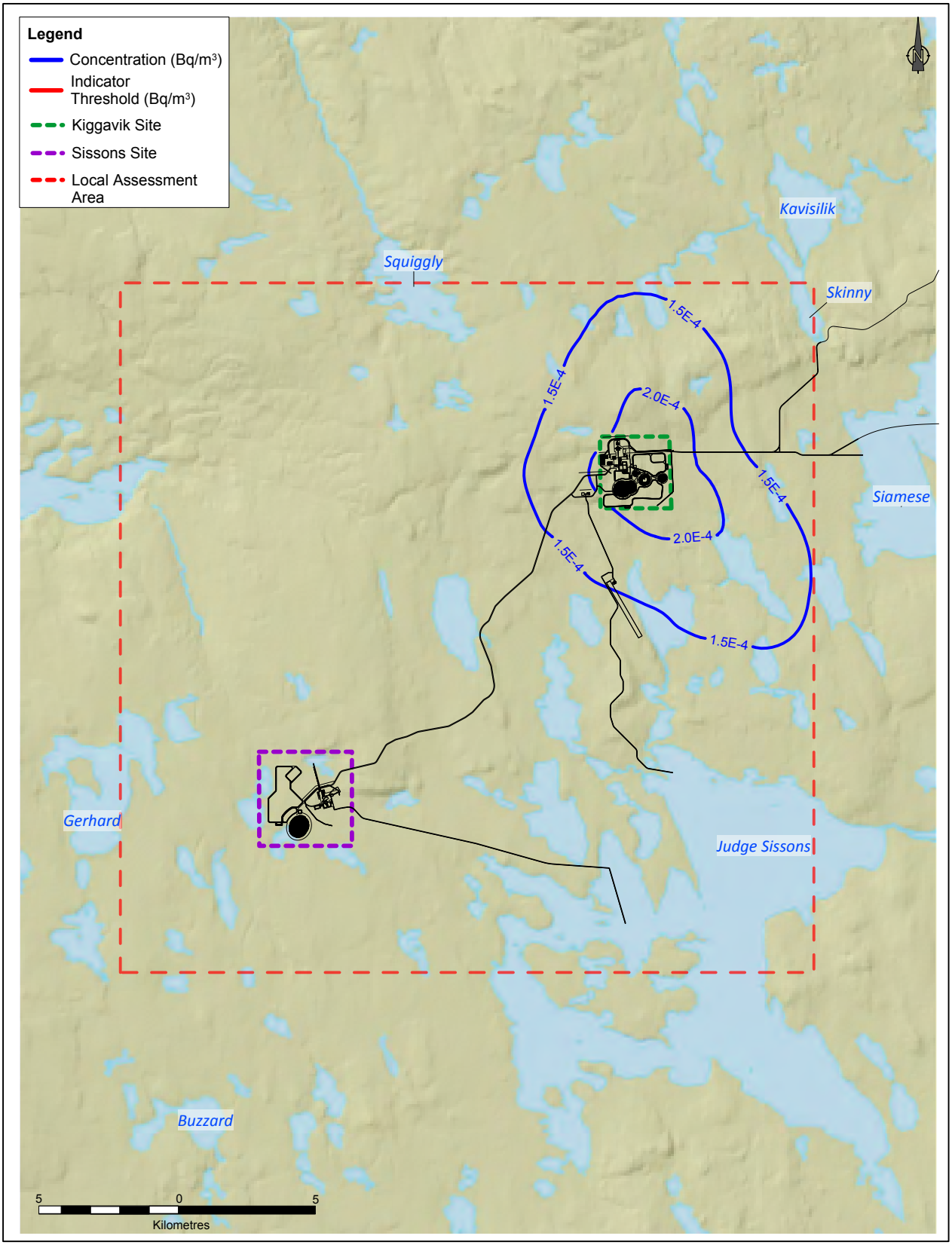

Projection: NAD 1983 UTM Zone 14N
Compiled: SENES Consultants
Date: 05/05/2014
Data Sources: *Natural Resources Canada, Geobase®, Nation Topographic Database, AREVA Resources Canada Inc.*

FIGURE 6.1-25
Operation Assessment - Phase 1
Annual Lead-210 (Pb-210) Concentration (Bq/m³)

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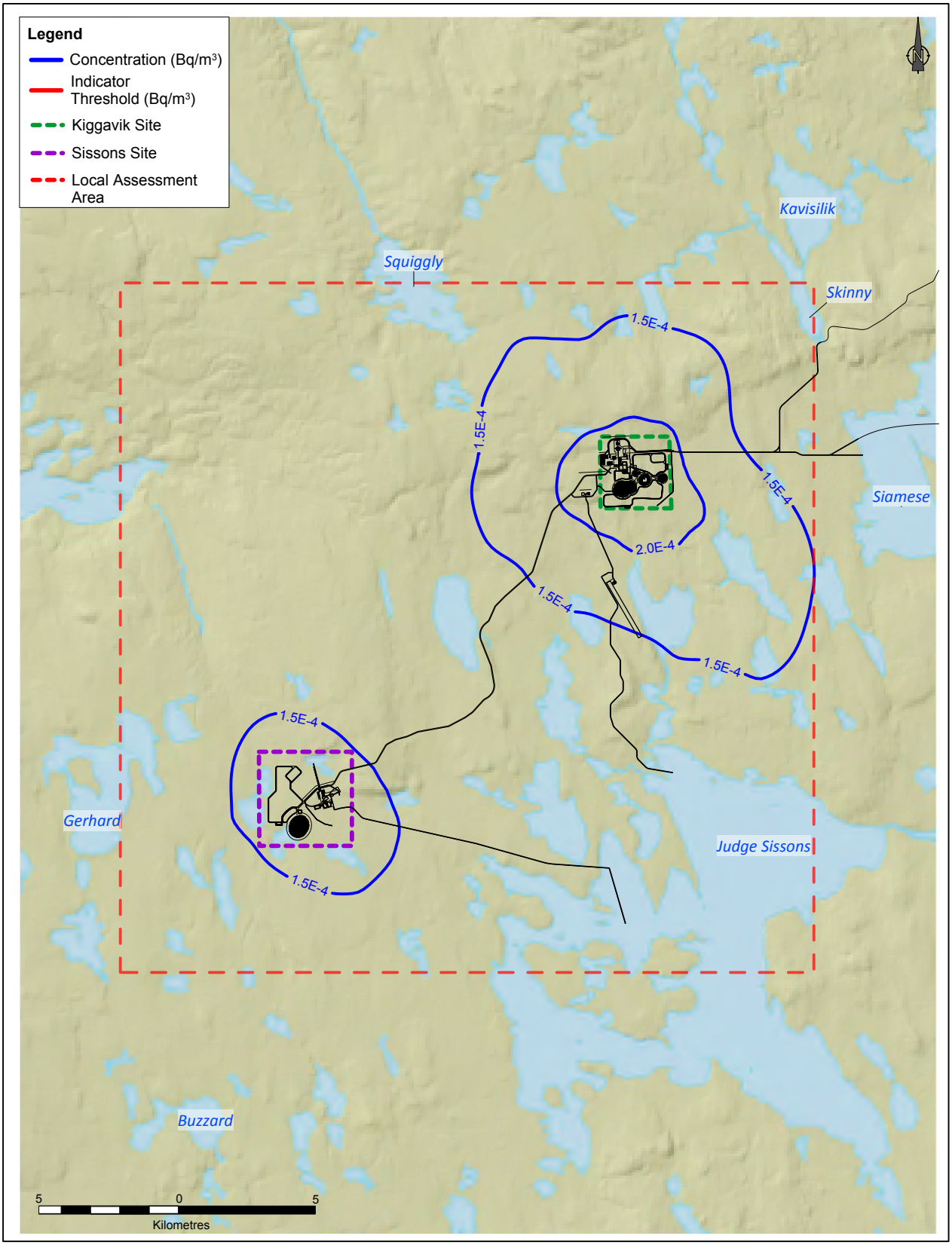

Projection: NAD 1983 UTM Zone 14N
Compiled: SENES Consultants
Date: 05/05/2014
Data Sources: *Natural Resources Canada, Geobase®, Nation Topographic Database, AREVA Resources Canada Inc.*

FIGURE 6.1-26
Operation Assessment - Phase 2
Annual Lead-210 (Pb-210) Concentration (Bq/m³)

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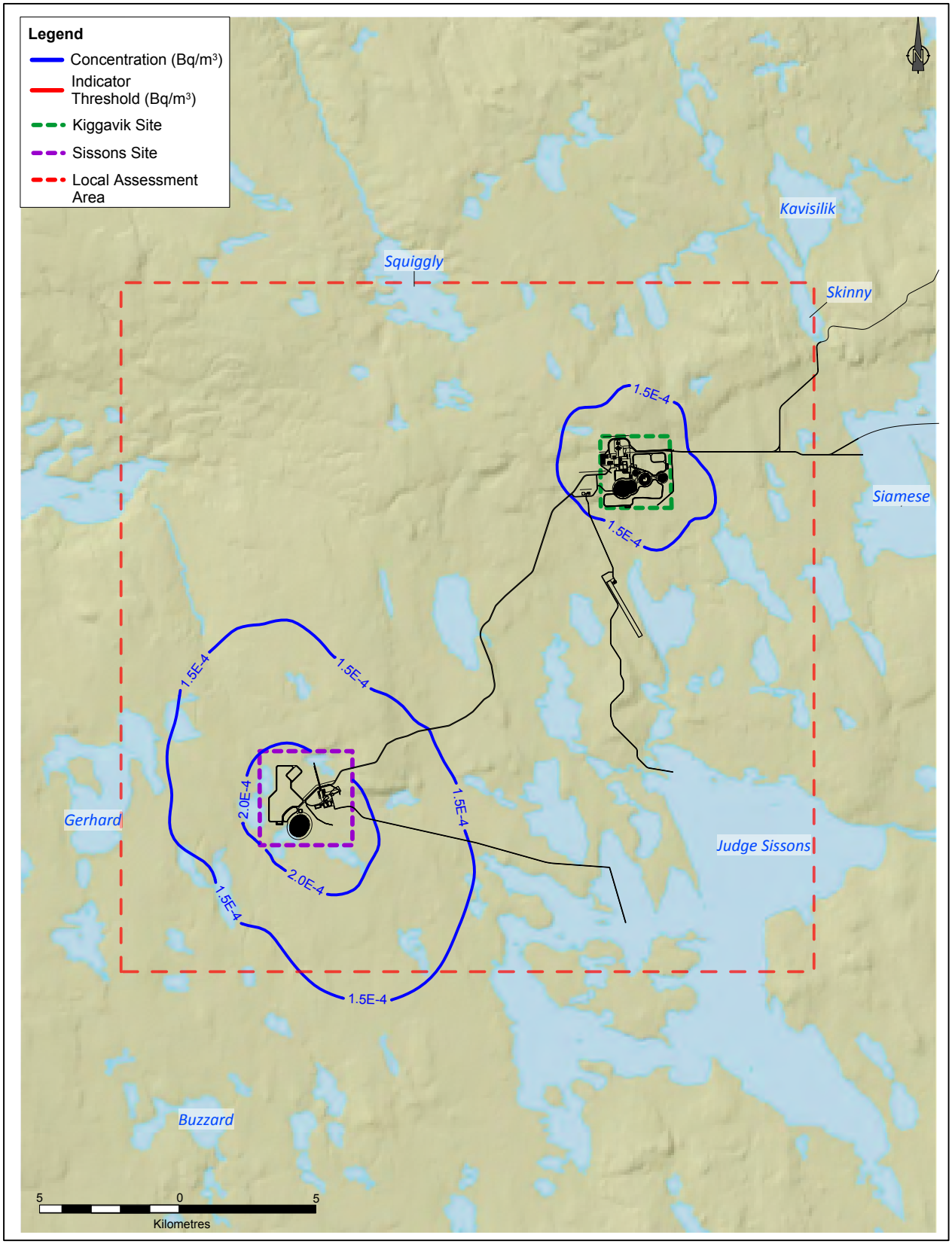

Projection: NAD 1983 UTM Zone 14N
Compiled: SENES Consultants
Date: 05/05/2014
Data Sources: *Natural Resources Canada, Geobase®, Nation Topographic Database, AREVA Resources Canada Inc.*

FIGURE 6.1-27
Operation Assessment - Phase 3
Annual Lead-210 (Pb-210) Concentration (Bq/m³)
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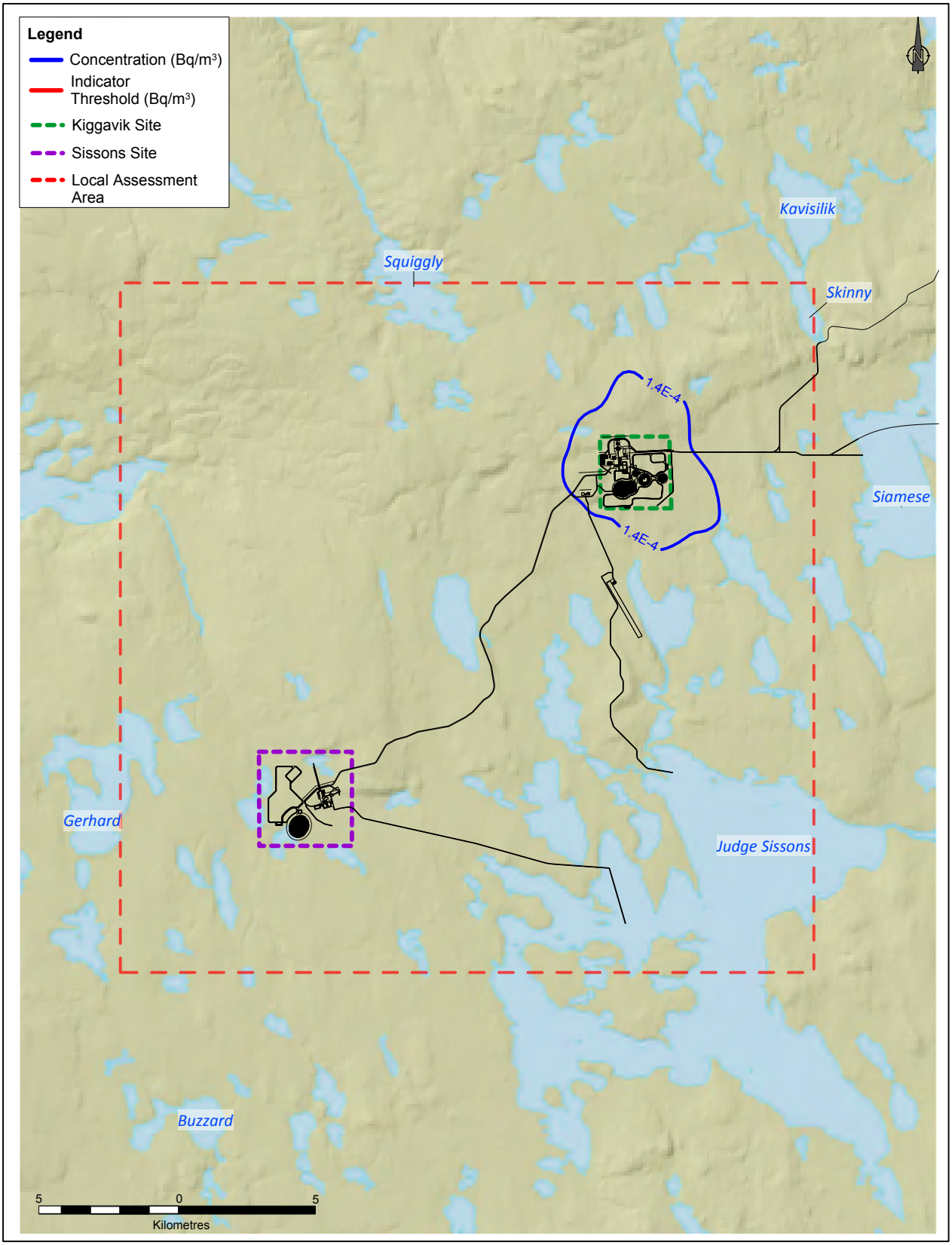

Projection: NAD 1983 UTM Zone 14N
Compiled: SENES Consultants
Date: 05/05/2014
Data Sources: *Natural Resources Canada, Geobase®, Nation Topographic Database, AREVA Resources Canada Inc.*

FIGURE 6.1-28
Operation Assessment - Phase 4
Annual Lead-210 (Pb-210) Concentration (Bq/m³)
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Table 6.1-7 Maximum 1- and 24-hour Concentrations of COPCs

Discrete Receptor	UTM Coordinates (m)		Maximum Concentration (µg/m³)								
			TSP	PM_{10}	$PM_{2.5}$		Uranium	NO_2		SO_2	
	Easting	Northing	24-hour	24-hour	24-hr 98th Percentile	24-hour	24-hour	1-hour	24-hour	1-hour	24-hour
Accommodation Complex	564900	7148433	**290.0 (11 days)**	**118.6 (15 days)**	15.8	24.2	**0.31 (1 day)**	380.7	171.9	41	15.4
Community of Baker Lake	644179	7135840	7.5	4.0	1.8	1.9	2.4E-05	3.8	1.0	0.2	0.04
Judge Sissons Lake Cabin	566550	7137729	19.6	14.5	2.6	3.7	2.0E-02	36.5	12.9	2.7	0.8
Background Concentration (µg/m³)			**6.8**	**3.4**	**1.7**	**1.7**	**2.4E-05**	**-**	**-**	**-**	**-**
Indicator Threshold (µg/m³)			**120**	**50**	**27**	**8.8**	**0.3**	**400**	**200**	**450**	**150**

NOTES:
Red text indicates that a value is greater than the air quality criteria. Number of exceedances indicated in brackets.
Concentrations predicted as a result of all sources, including blasting.
Concentrations (and exceedances) of TSP, PM_{10}, $PM_{2.5}$ and Uranium include background concentrations.

Table 6.1-8 Maximum 24-hour Metal Concentrations

Receptor Name	UTM Coordinates (m)		24-hour Maximum Concentration (µg/m³)									
	Easting	Northing	As	Cd	Cr	Co	Cu	Pb	Mo	Ni	Se	Zn
Accommodation Complex	564900	7148433	1.1E-03	1.9E-04	2.7E-02	3.7E-03	4.1E-02	2.1E-02	8.2E-03	1.1E-02	9.4E-04	2.2E-02
Community of Baker Lake	644179	7135840	2.9E-04	1.4E-04	6.7E-04	1.1E-04	3.5E-02	2.7E-03	6.0E-04	4.0E-04	4.5E-04	1.1E-02
Judge Sissons Lake Cabin	566550	7137729	4.4E-04	1.4E-04	5.1E-03	3.3E-04	3.6E-02	3.6E-03	9.5E-04	1.6E-03	5.1E-04	1.2E-02
Background Concentration (µg/m³)			**2.8E-04**	**1.4E-04**	**5.1E-04**	**9.1E-05**	**3.5E-02**	**2.6E-03**	**5.8E-04**	**3.4E-04**	**4.5E-04**	**1.1E-02**
Indicator Threshold (µg/m³)			**0.3**	**0.025**	**0.5**	**0.1**	**50**	**0.5**	**120**	**0.2***	**10**	**120**

NOTES:
Concentrations include background concentrations.

Table 6.1-9 Annual COPC Concentrations for Operation Period 1 to 4

Discrete Receptor	UTM Coordinates (m)		Operation Period	Annual Concentration (µg/m³)								
	Easting	Northing		TSP	PM_{10}	$PM_{2.5}$	Uranium	NO_2	SO_2	Radon (Bq/m³)	Pb-210 (Bq/m³)	Po-210 (Bq/m³)
Accommodation Complex	564900	7148433	Period 1 (Year 0-1)	22.5	10.2	2.7	1.0E-02	13.7	1.3	7.7	2.8E-04	2.0E-04
			Period 2 (Year 2-5)	17.2	8.5	2.5	2.0E-02	10.4	0.6	12.5	3.4E-04	2.6E-04
			Period 3 (Year 6-13)	7.7	4.5	1.8	1.0E-02	6.2	0.4	10.9	2.6E-04	1.8E-04
			Period 4 (Year 14)	4.3	2.5	1.3	1.0E-02	6.6	0.1	9.1	2.1E-04	1.4E-04
			Maximum	22.5	10.2	2.7	2.0E-02	13.7	1.3	12.5	3.4E-04	2.6E-04
Community of Baker Lake	644179	7135840	Period 1 (Year 0-1)	2.9	1.5	0.7	9.9E-06	0.0	0.0	0.0	1.3E-04	5.4E-05
			Period 2 (Year 2-5)	2.9	1.5	0.7	9.9E-06	0.0	0.0	0.0	1.3E-04	5.4E-05
			Period 3 (Year 6-13)	2.9	1.5	0.7	9.9E-06	0.0	0.0	0.0	1.3E-04	5.4E-05
			Period 4 (Year 14)	2.9	1.5	0.7	9.9E-06	0.0	0.0	0.0	1.3E-04	5.4E-05
			Maximum	2.9	1.5	0.7	9.9E-06	0.0	0.0	0.0	1.3E-04	5.4E-05
Judge Sissons Lake Cabin	566550	7137729	Period 1 (Year 0-1)	3.4	1.8	0.8	9.9E-06	0.8	0.1	0.2	1.3E-04	5.9E-05
			Period 2 (Year 2-5)	3.7	2.0	0.8	9.9E-06	0.8	0.0	0.3	1.4E-04	6.2E-05
			Period 3 (Year 6-13)	3.3	1.8	0.8	9.9E-06	0.6	0.0	0.2	1.3E-04	5.9E-05
			Period 4 (Year 14)	3.0	1.5	0.7	9.9E-06	0.4	0.0	0.2	1.3E-04	5.5E-05
			Maximum	3.7	2.0	0.8	9.9E-06	0.8	0.1	0.3	1.4E-04	6.2E-05
Background Concentration (µg/m³)				**2.9**	**1.5**	**0.7**	**9.9E-06**	**-**	**-**	**-**	**1.3E-04**	**5.4E-05**
Indicator Threshold (µg/m³)				**60**	**-**	**8.8**	**0.03**	**60**	**30**	**60 (Bq/m³)**	**0.0021 (Bq/m³)**	**0.0028 (Bq/m³)**

NOTES:

NO_2 concentrations predicted as a result of all sources, including blasting.

Concentrations of TSP, PM_{10}, $PM_{2.5}$, Uranium, Pb-210 and Po-210 include background concentrations.

Table 6.1-10 Annual Metals Concentrations for Operation Period 1 to 4

Discrete Receptor	UTM Coordinates (m)		Operation Period	Annual Concentration (µg/m^3)									
	Easting	Northing		As	Cd	Cr	Co	Cu	Pb	Mo	Ni	Se	Zn
Accommodation Complex	564900	7148433	Period 1 (Year 0-1)	9.5E-04	6.3E-05	1.7E-03	3.2E-04	1.6E-02	2.1E-03	5.6E-04	9.4E-04	2.3E-04	5.4E-03
			Period 2 (Year 2-5)	5.4E-04	6.3E-05	1.2E-03	2.2E-04	1.5E-02	2.3E-03	8.4E-04	6.8E-04	2.2E-04	5.1E-03
			Period 3 (Year 6-13)	7.3E-04	6.1E-05	1.2E-03	7.0E-05	1.5E-02	1.5E-03	3.2E-04	3.1E-04	2.0E-04	4.6E-03
			Period 4 (Year 14)	5.7E-04	6.1E-05	8.4E-04	5.2E-05	1.5E-02	1.4E-03	2.9E-04	2.3E-04	2.0E-04	4.6E-03
			Maximum	9.5E-04	6.3E-05	1.7E-03	3.2E-04	1.6E-02	2.3E-03	8.4E-04	9.4E-04	2.3E-04	5.4E-03
Community of Baker Lake	644179	7135840	Period 1 (Year 0-1)	1.2E-04	6.0E-05	2.2E-04	4.1E-05	1.5E-02	1.1E-03	2.4E-04	1.5E-04	2.0E-04	4.5E-03
			Period 2 (Year 2-5)	1.3E-04	6.0E-05	2.2E-04	4.1E-05	1.5E-02	1.1E-03	2.4E-04	1.5E-04	2.0E-04	4.5E-03
			Period 3 (Year 6-13)	1.3E-04	6.0E-05	2.2E-04	4.0E-05	1.5E-02	1.1E-03	2.4E-04	1.5E-04	2.0E-04	4.5E-03
			Period 4 (Year 14)	1.2E-04	6.0E-05	2.2E-04	4.0E-05	1.5E-02	1.1E-03	2.4E-04	1.5E-04	2.0E-04	4.5E-03
			Maximum	1.3E-04	6.0E-05	2.2E-04	4.1E-05	1.5E-02	1.1E-03	2.4E-04	1.5E-04	2.0E-04	4.5E-03
Judge Sissons Lake Cabin	566550	7137729	Period 1 (Year 0-1)	1.7E-04	6.0E-05	2.8E-04	5.1E-05	1.5E-02	1.2E-03	2.5E-04	1.8E-04	2.0E-04	4.6E-03
			Period 2 (Year 2-5)	1.6E-04	6.0E-05	3.1E-04	5.3E-05	1.5E-02	1.2E-03	2.5E-04	1.9E-04	2.0E-04	4.6E-03
			Period 3 (Year 6-13)	2.5E-04	6.0E-05	3.2E-04	4.5E-05	1.5E-02	1.1E-03	2.4E-04	1.7E-04	2.0E-04	4.6E-03
			Period 4 (Year 14)	1.3E-04	6.0E-05	2.3E-04	4.1E-05	1.5E-02	1.1E-03	2.4E-04	1.5E-04	2.0E-04	4.5E-03
			Maximum	2.5E-04	6.0E-05	3.2E-04	5.3E-05	1.5E-02	1.2E-03	2.5E-04	1.9E-04	2.0E-04	4.6E-03
Background Concentration (µg/m^3)				**1.2E-04**	**6.0E-05**	**2.2E-04**	**4.0E-05**	**1.5E-02**	**1.1E-03**	**2.4E-04**	**1.5E-04**	**2.0E-04**	**4.5E-03**
Indicator Threshold (µg/m^3)				**0.06**	**0.005**	**0.3**	**0.02**	**9.6**	**0.1**	**23**	**0.4**	**1.9**	**23**

NOTES:

Concentrations include background concentrations.

Dust Deposition and Potential Acid Input

Table 6.1-11 presents the predicted monthly, annual average and total annual dust deposition levels at the sensitive POR locations for the maximum operation assessment. The potential environmental effects of these deposition values are further evaluated in Volume 5 of the EIS.

Like TSP concentrations, dust deposition rates are largely a result of emissions from open pit mining activities (particularly haul truck movements in and out of pits) and traffic along the Kiggavik-Sissons haul road. This is evident in Figure 6.1-29 which graphically shows total annual dust deposition. As can be seen in the figure, dust deposition levels are less than the Indicator Threshold beyond the Project Footprint. In particular, dust deposition rates are predicted to be in the range of 15 g/m²/year (150 kg/ha/year) in close proximity to the mine sites and the Kiggavik-Sissons haul road. However, deposition rates quickly drop off with distance from the mine site and road. For example, in the vicinity of the Kiggavik-Sissons haul road, the deposition rate drops from 15 g/m²/year at around 200 m to 5 g/m²/year within 800 m of the road (a 67% decrease). At about 12 km from the Project Footprint, total annual deposition begins to approach background levels.

The pattern of the dust deposition results for the Kiggavik Project are similar to the findings described in the EKATI Diamond Mine dispersion modelling assessment (Rescan 2006a), which predicted high dust deposition rates around the haul roads that dropped off quickly with increasing distance. The EKATI assessment also predicted that measurable dust deposition rates (i.e., above baseline) occur within a zone of 14 km from the mine site which is not unlike the predictions made here for the Kiggavik Project. The dustfall pattern predicted in the EKATI assessment has since been verified by an ongoing dustfall monitoring program (Rescan 2006b; 2010; 2012) which has shown that zone of influence is between 14 to 20 km. Additionally, dustfall measurements within the vicinity of the haul roads at EKATI show that on average, values drop by about 75% within 90 m of the EKATI haul roads and by 80-90% within 300 m of the haul roads. These results are consistent with the measurements made along the Meadowbank All Weather Access Road, which showed that dustfall values decrease by almost 60% within 100 m of the road (Agnico Eagle Mines Limited 2013). These measurements indicate that dust levels along haul roads actually decrease faster than what was predicted by the model along the Kiggavik-Sissons haul road which suggests that the predictions for Kiggaik are conservative. A more detailed comparison to EKATI Mine as well as the Meadowbank Mine dust deposition modelling can be found in Appendix 4B, Attachment E.

Table 6.1-11 Monthly, Average Annual and Total Annual Dust Deposition for the Maximum Operation Assessment

Receptor Name	UTM Coordinates (m)		Dust Deposition		
	Easting	Northing	Maximum Monthly (g/m^2/30 days)	Average Annual (g/m^2/30 days)	Total Annual (g/m^2/year)
Camp	564900	7148433	2.3	1.3	15.8
Baker Lake	644179	7135840	0.04	0.04	0.5
Judge Sissons Lake	566550	7137729	0.2	0.1	1.6
Background Dust Deposition			**0.04 g/m^2/30 days**	**0.04 g/m^2/30 days**	**0.48 g/m^2/year**
Indicator Threshold			**7 g/m^2/30 days**	**4.6 g/m^2/30 days**	**55 g/m^2/year**

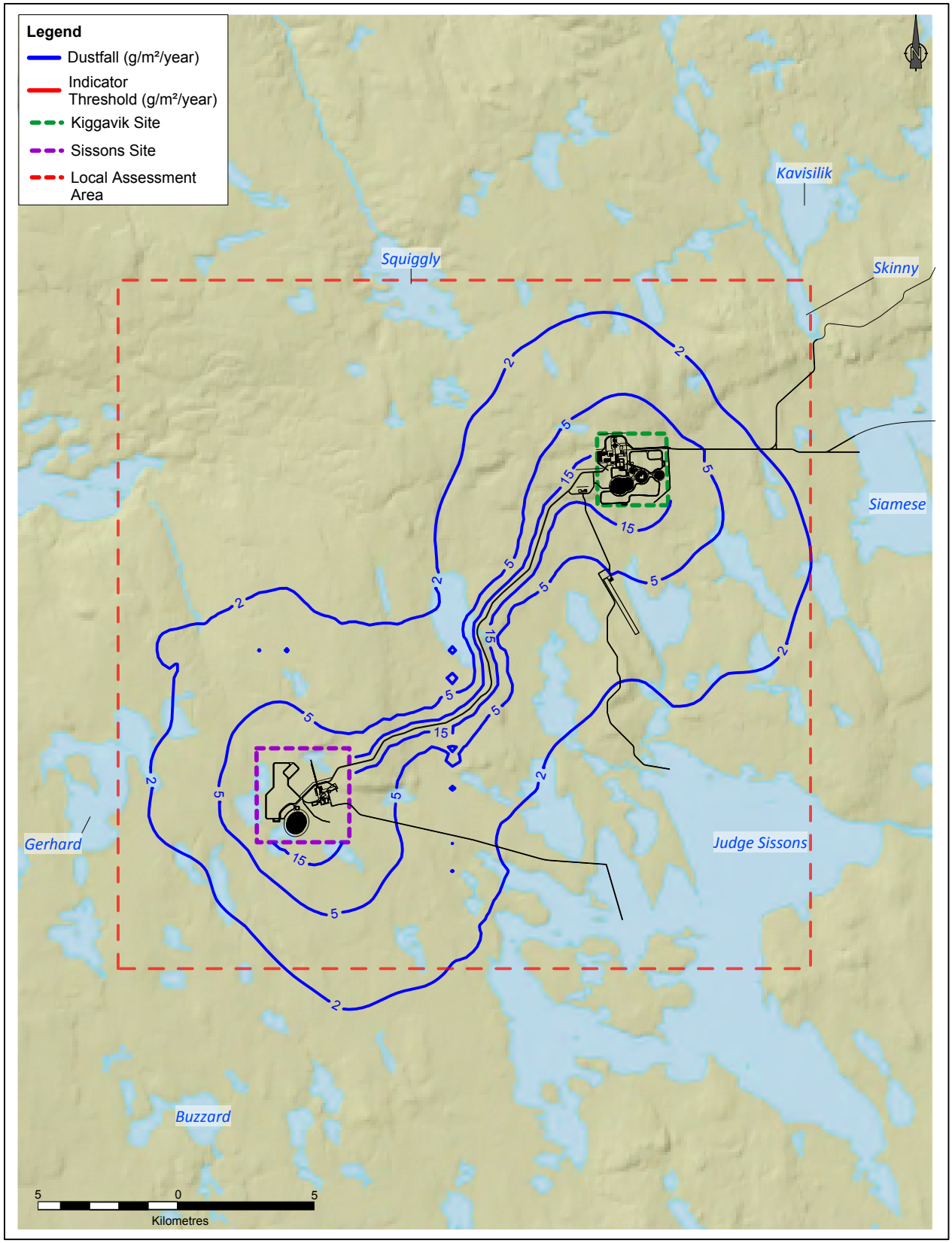
NOTES:
Deposition rates include background deposition rates.

Table 6.1-12 provides the estimated annual Potential Acid Input (PAI) values in the local assessment area (LAA). As is shown in the table, PAI values did not exceed either the 0.5 keq/ha/yr or 1.0 keq/ha/year thresholds. However there were exceedances of the 0.25 keq/ha/year Threshold to within approximately 1 km of the Project Footprint at the Kiggavik site. The potential environmental effects of these PAI values are further evaluated in Volume 6 of the EIS.

Table 6.1-12 Estimated Annual Potential Acid Input based on Period 2 (Year 2-5) NO_2 and SO_2 Emissions

Parameter	Background PAI (keq/ha/yr)	Total PAI (keq/ha/yr)		Mine Contribution to PAI (%)
		Kiggavik	Sissons	
Max. Annual Average Deposition	0.093	0.294	0.172	68%
Area above 0.17 keq/ha/yr (ha)	0	2200	0	100%
Area above 0.22 keq/ha/yr (ha)	0	730	0	100%
Area above 0.25 keq/ha/yr (ha)	0	225	0	100%
Area above 0.50 keq/ha/yr (ha)	0	0	0	n/a
Area above 1.00 keq/ha/yr (ha)	0	0	0	n/a

NOTES:
Mine contribution refers to both mine sites, Kiggavik and Sissons.
Total PAI includes background PAI.



Projection: NAD 1983 UTM Zone 14N
Compiled: SENES Consultants
Date: 05/05/2014
Data Sources: *Natural Resources Canada, Geobase®, Nation Topographic Database, AREVA Resources Canada Inc.*

FIGURE 6.1-29
Maximum Operations Assessment
Total Annual Dust Deposition (g/m²/year)

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