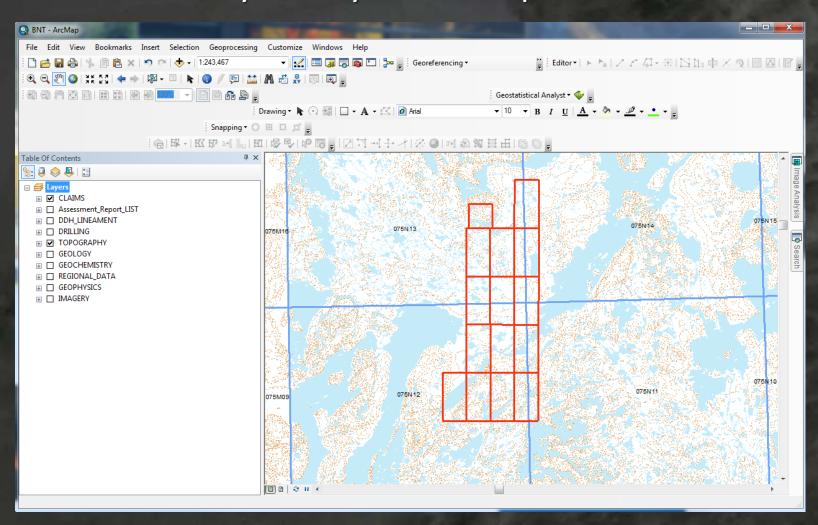
# BNT – Fox Lake Project 2D Layer Summary

Venessa Bennett
Ph.D., Adv. Dip. GIS/Remote Sensing
Geomantia Consulting

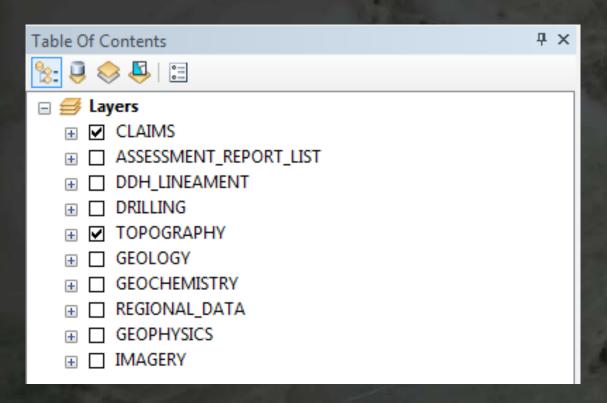
#### **BNT – 2D Project**

Relevant Fox Lake geology, geochemistry, geophysics, available satellite imagery and drilling datasets have been compiled into a 2D ArcGIS workspace (BNT.wor) over the historic Au showing (Fox Lake and Zena)

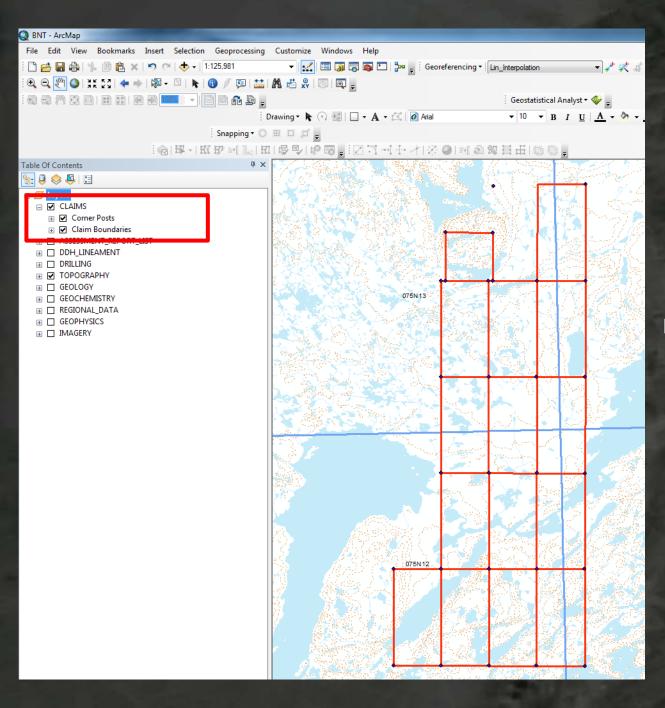
Each layer is briefly outlined in this presentation



### BNT – 2D LAYERS



Project Data has been assembled into 10 Major Groupings based on data type

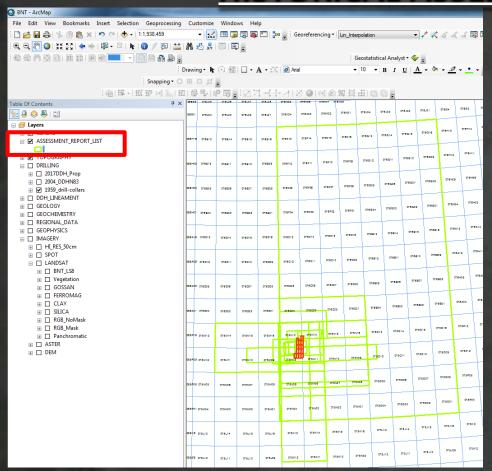


#### **CLAIMS DATA**

Claim Data provided by Carlincore Resources Ltd.

Polygon Claim Blocks
Point Claim Post Locations

#### HISTORICAL ASSESSMENT REPORTS

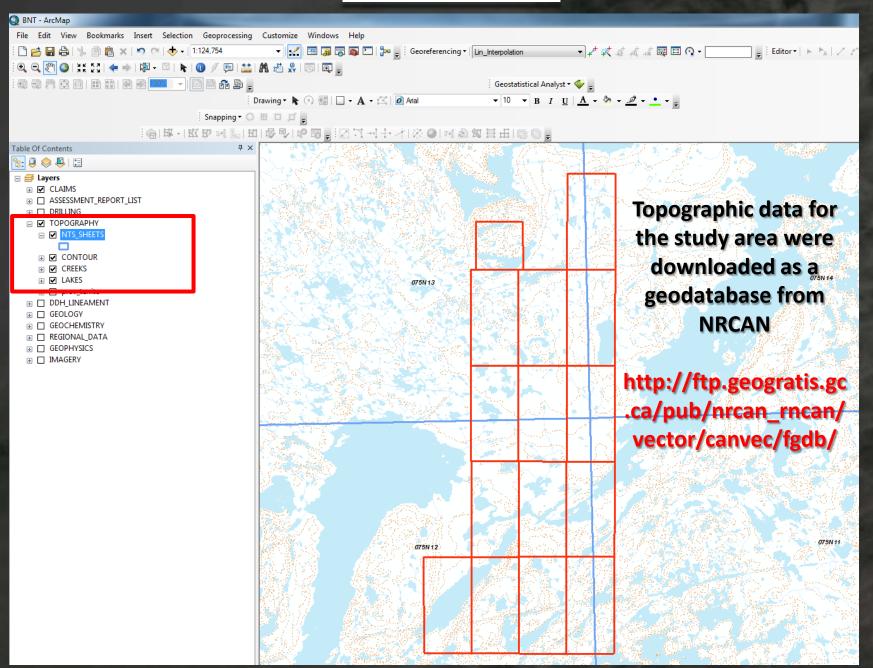


Polygons of areas covered by historical assessment reports that intersect the Fox Lake claims

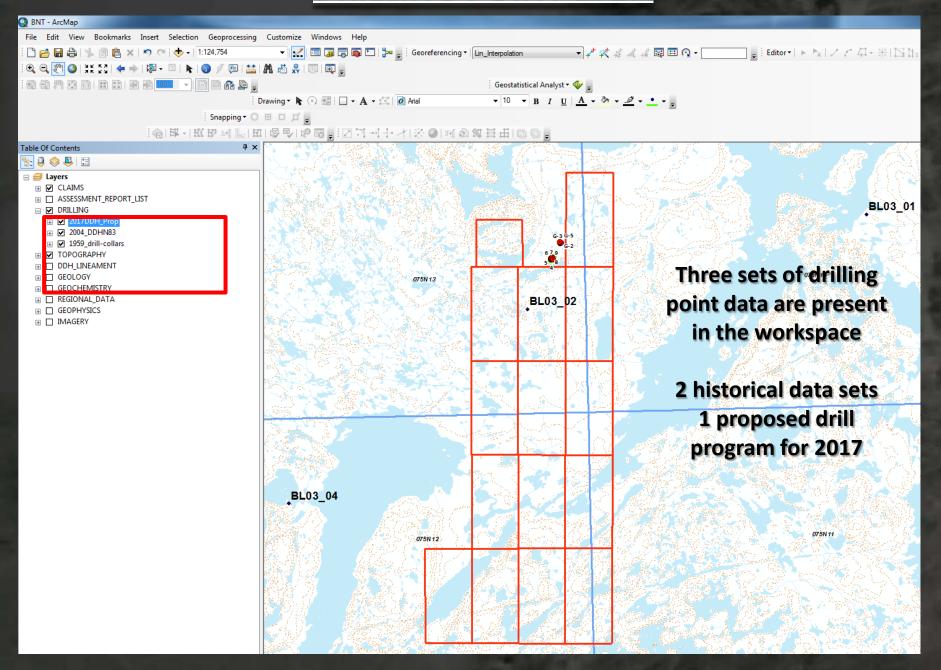
24 Reports are available and the most relevant are provided with the digital data associated with this presentation

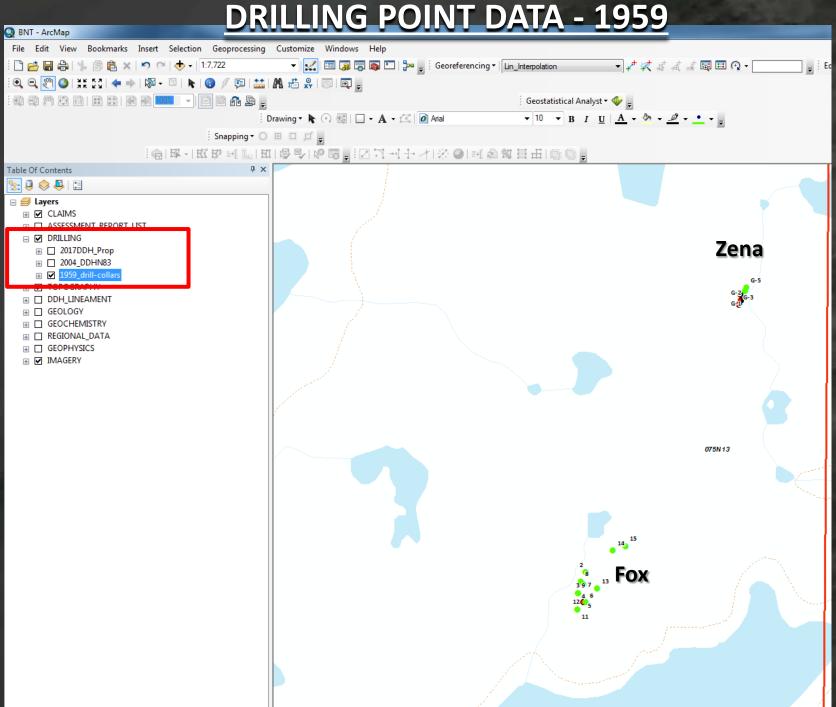
FID	Shape *	C_REFER_ID	C_REFER_NB	DESCRIPTIO	C_DATE	AUTHOR	TITLE	OWNER	OPERATOR_N	AVAILABLE	WEBLINK
	Polygon		017090	Assessment Report		McConnell GW	1959 Geological Report on the QUIZ Cla		Bibis Yukon Mines Ltd.	Distributed by NTGO	
18	Polygon		082435	Assessment Report		Byrne NW; McConnell GW	Diamond Drilling of the FOX Group 1959		Consolidated Northland Ltd.	Distributed by NTGO	
4	Polygon	8126	083888	Assessment Report	10-JUL-97	Jones BE	Geochemical Assessment Report on th	Cypango Ventures Ltd.	Cypango Ventures Ltd.	Distributed by NTGO	http://ntgomap.nwtgeoscience.ca/reference_details_gateway.jsp?referenceID=8126
10	Polygon		083944	Assessment Report	27-OCT-97	Foulkes JP	Geochemical Assessment Report on th	Cypango Ventures Ltd.	Cypango Ventures Ltd.	Distributed by NTGO	http://ntgomap.nwtgeoscience.ca/reference_details_gateway.jsp?referenceID=8207
13	Polygon	8283	084041	Assessment Report	01-MAY-98	Jones BE	Geochemical Assessment Report	Cypango Ventures Ltd.	Canamera Geological Ltd.	Distributed by NTGO	http://ntgomap.nwtgeoscience.ca/reference_details_gateway.jsp?referenceID=8283
23	Polygon		083348	Assessment Report		Ostensoe EA; Killin K	1992-94 Geophysical and Geochemical	Gerle Gold Ltd.	Gerle Gold Ltd.		
16	Polygon	2429	017109	Assessment Report	01-AUG-60	Christopher IC	Wamsley Lake Area Magnetometer Sur	Kipwater Mines Ltd.	Kipwater Mines Ltd.	Distributed by NTGO	http://ntgomap.nwtgeoscience.ca/reference_details_gateway.jsp?referenceID=2429
3	Polygon	2415	083444	Assessment Report	03-MAR-95	Bird H, Begin N, Clarke G, Grexton L	1993-94 Geophysical and Geochemical	Major General Resources	SouthernEra Resources Ltd, Major Gen	Distributed by NTGO	http://ntgomap.nwtgeoscience.ca/reference_details_gateway.jsp?referenceID=2415
1	Polygon	8644	084239	Assessment Report	16-NOV-99	Eichenberg DJ, Hardy F, Pfister SS	Glacial Sediment Sampling on the AK an	Mountain Province Mining	Monopros Ltd	Distributed by NTGO	http://ntgomap.nwtgeoscience.ca/reference_details_gateway.jsp?referenceID=8644
0	Polygon	2395	083381	Assessment Report	15-NOV-94	Smith PA; Hicks K	1992-94 CJ and AK Property Geophysi	Mountain Province Mining Inc.	Canamera Geological Ltd.	Distributed by NTGO	http://ntgomap.nwtgeoscience.ca/reference_details_gateway.jsp?referenceID=2395
6	Polygon	6862	083580	Assessment Report	17-NOV-95	Foulkes JP; Rockel ER	Report on Geological, Geophysical and	Mountain Province Mining Inc.	Mountain Province Mining Inc.	Distributed by NTGO	http://ntgomap.nwtgeoscience.ca/reference_details_gateway.jsp?referenceID=6862
7	Polygon	8395	084122	Assessment Report	16-NOV-98	Eichenberg D, Paniatowski BT, Hardy F	Geological Assessment Report Summar	Mountain Province Mining Inc., Glenmore Highlands Inc., Camp	Monopros Limited	Distributed by NTGO	http://ntgomap.nwtgeoscience.ca/reference_details_gateway.jsp?referenceID=8395
5	Polygon	7484	083753	Assessment Report	12-NOV-96	Foulkes J; Jones BE; Anderson DG; Ro	Summary of Exploration and Evaluation	Mountain Province Mining Inc.; Glenmore Highlands Inc.; Camp	Mountain Province Mining Inc.; Glenmor	Distributed by NTGO	http://ntgomap.nwtgeoscience.ca/reference_details_gateway.jsp?referenceID=7484
17	Polygon	252	082452	Assessment Report	01-JAN-59	Byrne NW	1959 Diamond Drilling of the ZENA Grou	North Goldcrest Mines Ltd.	North Goldcrest Mines Ltd.	Distributed by NTGO	http://ntgomap.nwtgeoscience.ca/reference_details_gateway.jsp?referenceID=252
14	Polygon	12523	085032	Assessment Report	19-JUL-06	Naeher U	Back Lake Project Assessment Report	SouthernEra Diamonds Inc., Kalahari Resources Inc., Island A	SouthernEra Diamonds Inc.	Distributed by NTGO	http://ntgomap.nwtgeoscience.ca/reference_details_gateway.jsp?referenceID=12523
2	Polygon	8365	084107	Assessment Report	15-OCT-98	Bird HM	Back Lake and MacKay Lake Summary	SouthernEra Resources Ltd	SouthernEra Resources Ltd	Distributed by NTGO	http://ntgomap.nwtgeoscience.ca/reference_details_gateway.jsp?referenceID=8365
8	Polygon	8140	083904	Assessment Report	05-AUG-97	Bird HM	Summary Report of Heavy Mineral Sam	SouthernEra Resources Ltd	SouthernEra Resources Ltd	Distributed by NTGO	http://ntgomap.nwtgeoscience.ca/reference_details_gateway.jsp?referenceID=8140
9	Polygon	6877	083597	Assessment Report	10-NOV-95	Bird HM	Report on Heavy Mineral Till Sampling a	Southernera Resources Ltd	Southernera Resources Ltd	Distributed by NTGO	http://ntgomap.nwtgeoscience.ca/reference_details_gateway.jsp?referenceID=6877
11	Polygon	8398	084126	Assessment Report	24-NOV-98	Bird H M	Summary report of heavy mineral till sa	SouthernEra Resources Ltd	SouthernEra Resources Ltd	Distributed by NTGO	http://ntgomap.nwtgeoscience.ca/reference_details_gateway.jsp?referenceID=8398
20	Polygon	2457	083622	Assessment Report	13-OCT-95	Bird HM	Heavy Mineral Sampling in the Back Lak	SouthernEra Resources Ltd	SouthernEra Resources Ltd	Distributed by NTGO	http://ntgomap.nwtgeoscience.ca/reference_details_gateway.jsp?referenceID=2457
12	Polygon	12170	084705	Assessment Report	09-AUG-04	Naeher U	Assessment Report of 2002 to 2004 G	SouthernEra Resources Ltd., Kalahari Resources Ltd., Island	SouthernEra Resources Ltd.	Distributed by NTGO	http://ntgomap.nwtgeoscience.ca/reference_details_gateway.jsp?referenceID=12170
19	Polygon	2398	083299	Assessment Report	27-JUN-94	Wynne A; Evans BT; McConnell DL	Airborne Ground Geophysics, Sampling	Tyler Resources Inc.	Tyler Resources Inc.	Distributed by NTGO	http://ntgomap.nwtgeoscience.ca/reference_details_gateway.jsp?referenceID=2398
22	Polygon	8110	083865	Assessment Report	23-JUN-97	Jones BE	Geochemical Assessment Report on th	Tyler Resources Inc.	Tyler Resources Inc.	Distributed by NTGO	http://ntgomap.nwtgeoscience.ca/reference_details_gateway.jsp?referenceID=8110
21	Polygon	2441	019991	Assessment Report	01-JAN-60	Shields RC	Report on the GUS Mineral Claims	Yale Lead Zinc Mines Ltd.	Yale Lead Zinc Mines Ltd.	Distributed by NTGO	http://ntgomap.nwtgeoscience.ca/reference_details_gateway.jsp?referenceID=2441

#### **TOPOGRAPHY**



#### **DRILLING POINT DATA**

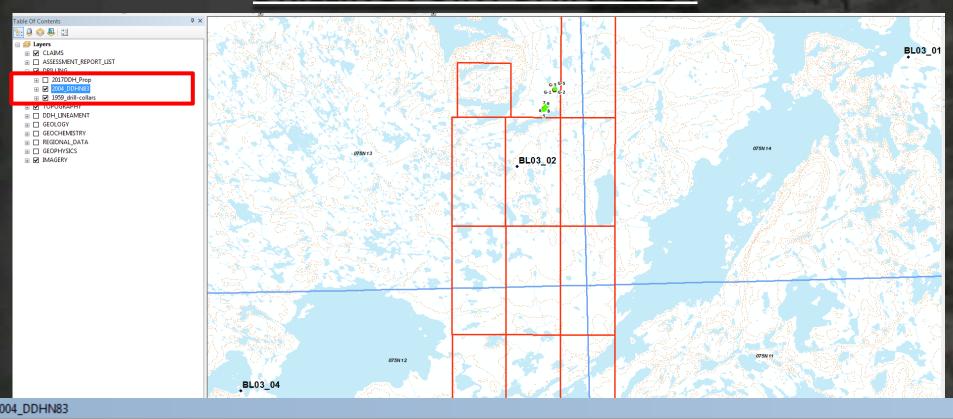




# **DRILLING POINT DATA – 1959 Attribute Data**

	-	21	2	11-1- ID	11788 F41-	11714 N - 41.1	061	2	21	
Ш	FID	Shape *	Property	Hole_ID	UTM_Eastin	UTM_Northi	Confidence	Bearing	Plunge	Lengthm_
Ŀ	0	Point	Zena	G-1	572551	7079062	Calculated	305	40	112.8
Ш	1	Point	Zena	G-2	572553	7079044	Calculated	305	40.5	104.9
	2	Point	Zena	G-3	572548	7079031	Calculated	305	41	86.6
	3	Point	Zena	G-4a	572565	7079072	Defined	305	40	29.3
	4	Point	Zena	G-4b	572565	7079072	Defined	305	50	96.6
	5	Point	Zena	G-5	572570	7079082	Defined	305	40.5	91.4
	6	Point	Fox	1	572085	7078226	Defined	n.a.	n.a.	n.a.
	7	Point	Fox	2	572085	7078226	Defined	307.5	60	124.1
	8	Point	Fox	3	572062	7078163	Defined	275	45	42.4
	9	Point	Fox	4	572062	7078163	Defined	275	60	74.1
	10	Point	Fox	5	572080	7078136	Approximate (+/- 5m)	275	40	83.8
	11	Point	Fox	6	572086	7078136	Defined	275	40	76.2
	12	Point	Fox	7	572080	7078189	Defined	275	40	122.2
	13	Point	Fox	8	572072	7078198	Defined	308	40	102.4
	14	Point	Fox	9	572062	7078163	Defined	275	38	115.2
	15	Point	Fox	10	572060	7078136	Approximate (+/- 5m)	286	59	114.6
	16	Point	Fox	11	572060	7078114	Defined	265.5	40	112.8
	17	Point	Fox	12	572060	7078114	Defined	287	41	112.2
	18	Point	Fox	13	572121	7078177	Defined	275	47	90.8
	19	Point	Fox	14	572168	7078291	Defined	310	45.5	119.5
	20	Point	Fox	15	572205	7078304	Defined	314	46	127.7

### **DRILLING POINT DATA - 2004**



Southern Era Resources Drill tested 3 widely spaced geophysical anomalies for potential kimberlite occurrences.

Azimuth

91

84

0

Dip

45

45

90

Length\_\_m\_

152.1

102.35

240.55

POINT X

588840.360573

570805.100932

558087.624378

POINT Y

7080547.55769

7075490.69754

7065145.97263

POINT\_Z

91

84

POINT M

Confidence

Defined

Defined

Defined

Shape \*

Point ZM

Point ZM

2 Point ZM

FID

Hole ID

BL03 01

BL03\_02

BL03 04

N27E Z12

588844

570808

558090

N27N Z12

7080351

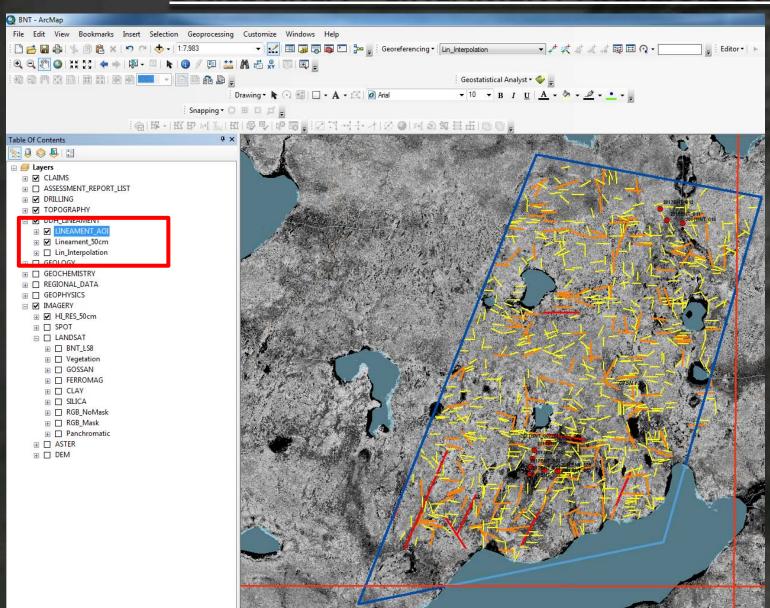
7075294

7064949

Property

No significant intercepts were reported

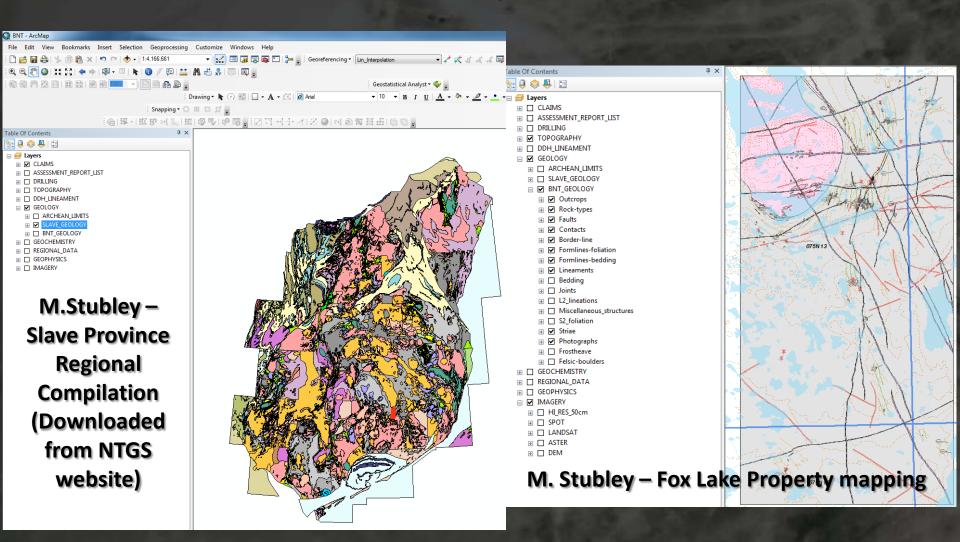
# DRILL AREA – LINEAMENT ANALYSIS DATA



50cm high resolution satellite data were used to conduct lineament analysis of the Fox Lake and Zena occurrences to assist with drill hole planning

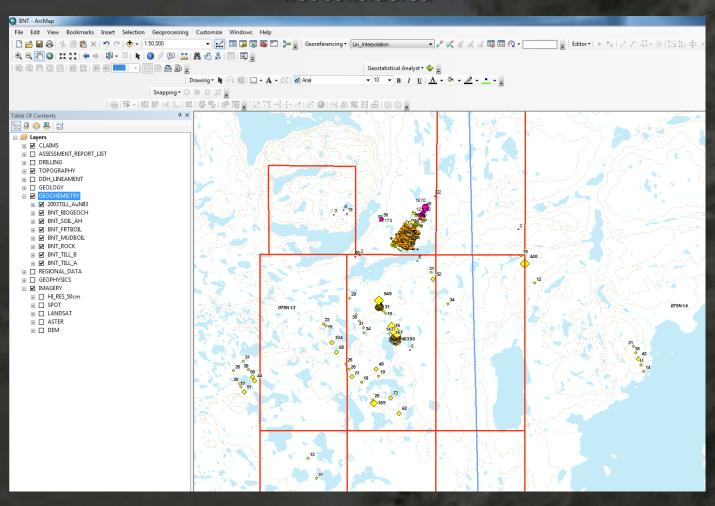
#### **GEOLOGY DATASETS**

Regional and Property Scale Digital Geology are provided in the ArcGIS Workspace.



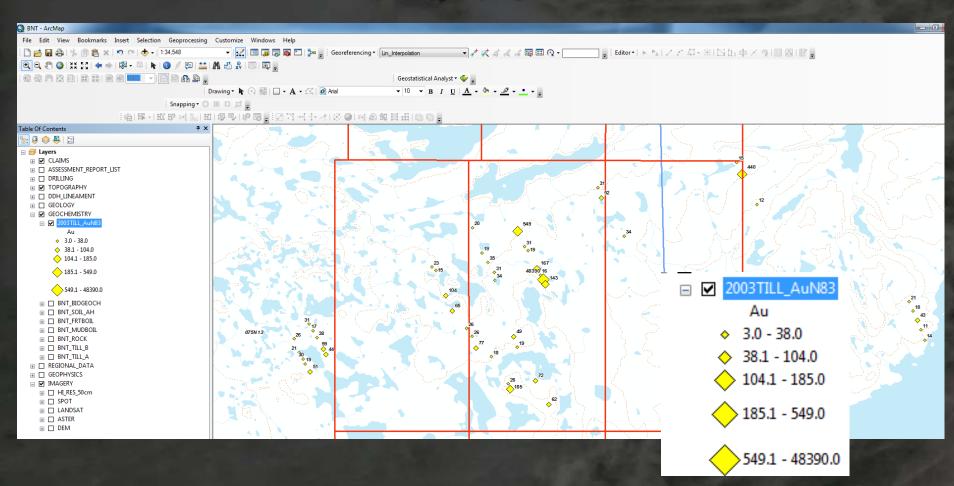
### **SURFACE GEOCHEMISTRY**

8 different surface geochemistry dataset are provided in the workspace, 1 representing historical Au grain in till data collected by Southern Era Resources. The historical Au values represent minimum gold estimates as the values were determined by back calculated Au grades from separated gold grains and weight of till sample. Any Au hosted in sulphides is not considered

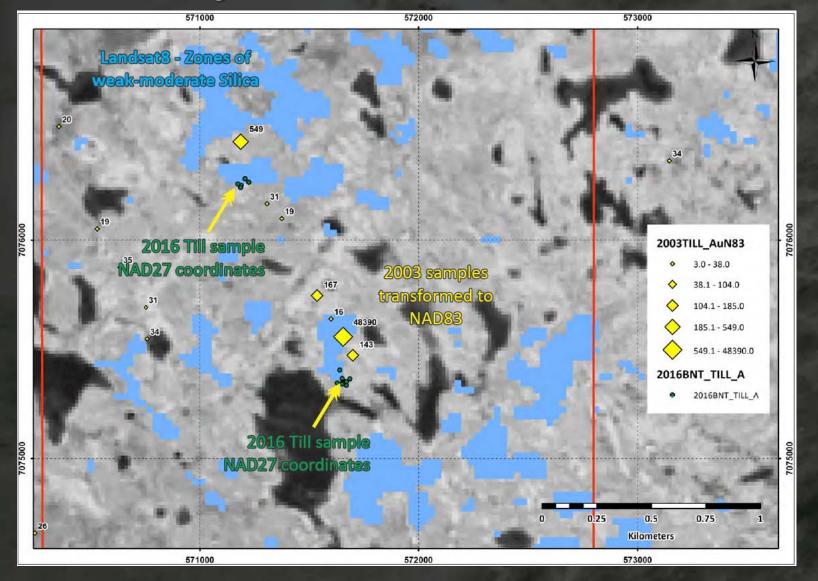


Gold ppb values > ~ 12 ppb were digitized from the 2004 Southern Era Assessment Report.

Several additional target areas are evident from this dataset and merit surface work during the 2017 program

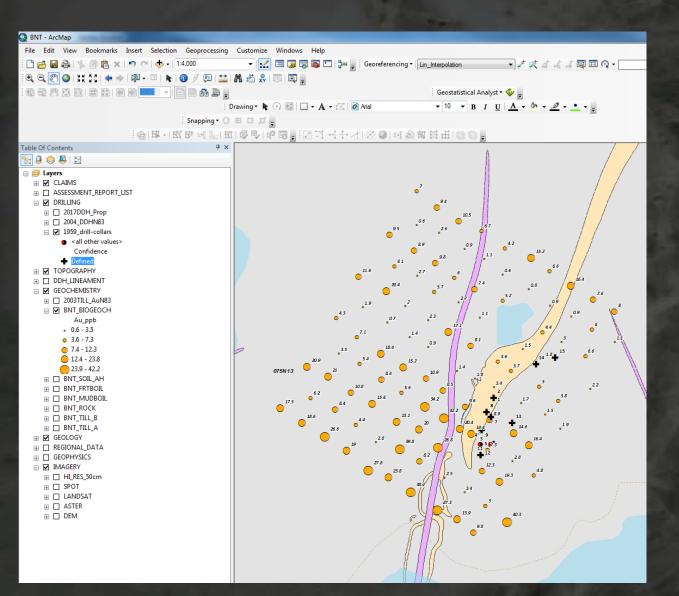


Historical high grade sample locations were visited in 2016 for resampling, however it appears the wrong coordinates (NAD27) were visited and new sampling did not cover historical gold anomalies. NAD27 data was not transformed to NAD83

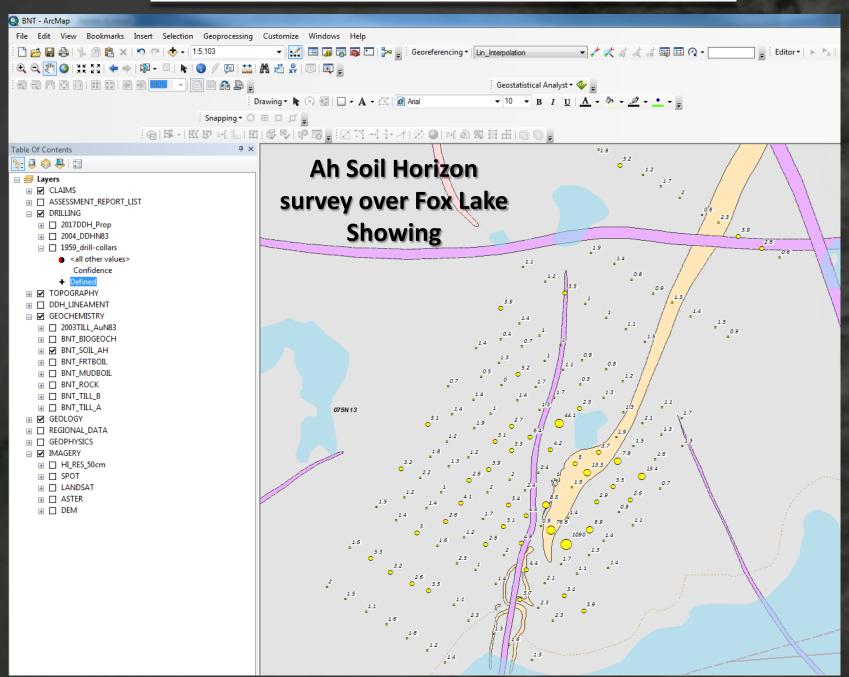


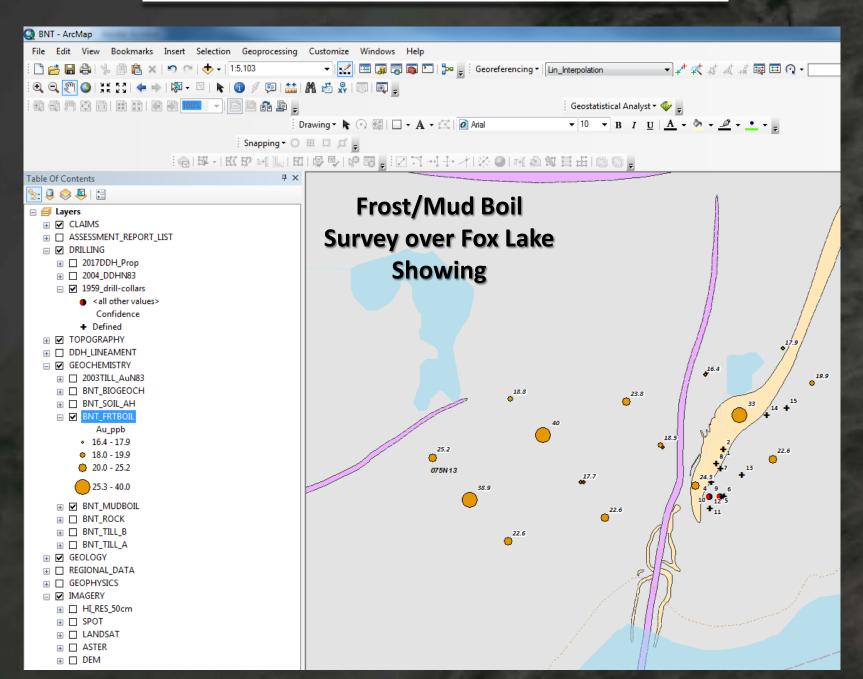
The 2003 anomalies locations should be revisited during the 2017 field program

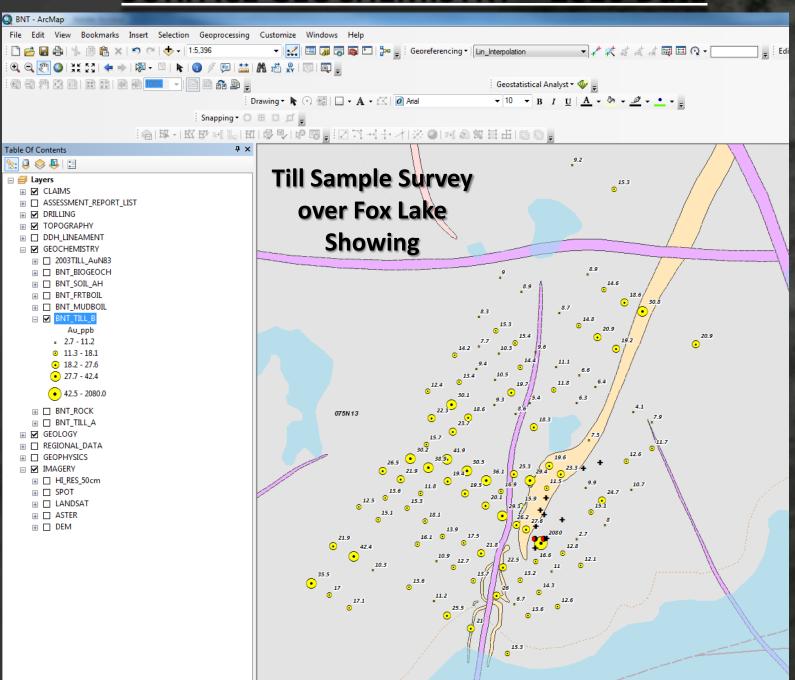
Majority of 2016 surface geochemistry was aimed at defining gold anomaly around the historical Fox lake showing

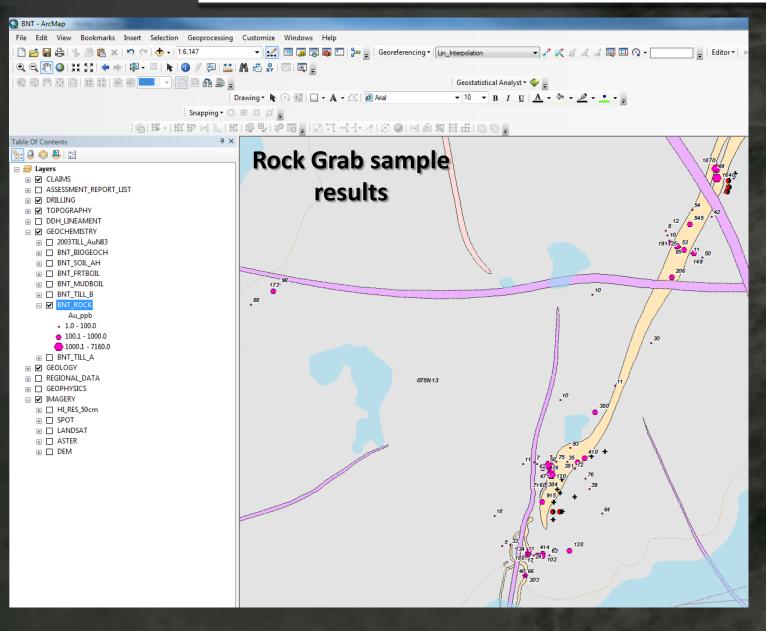


Biogeochemical survey over Fox Lake Showing







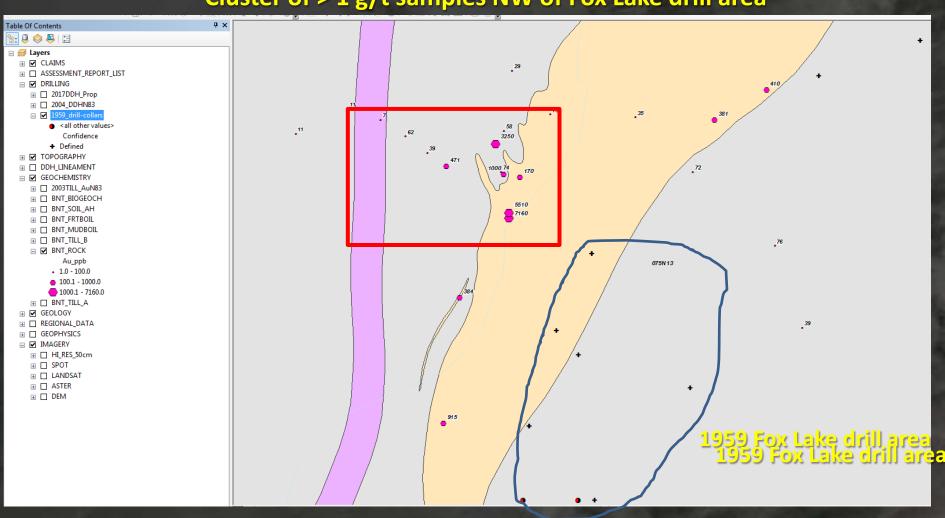


30 / 95 samples > 100 ppb

6 > 1g/t

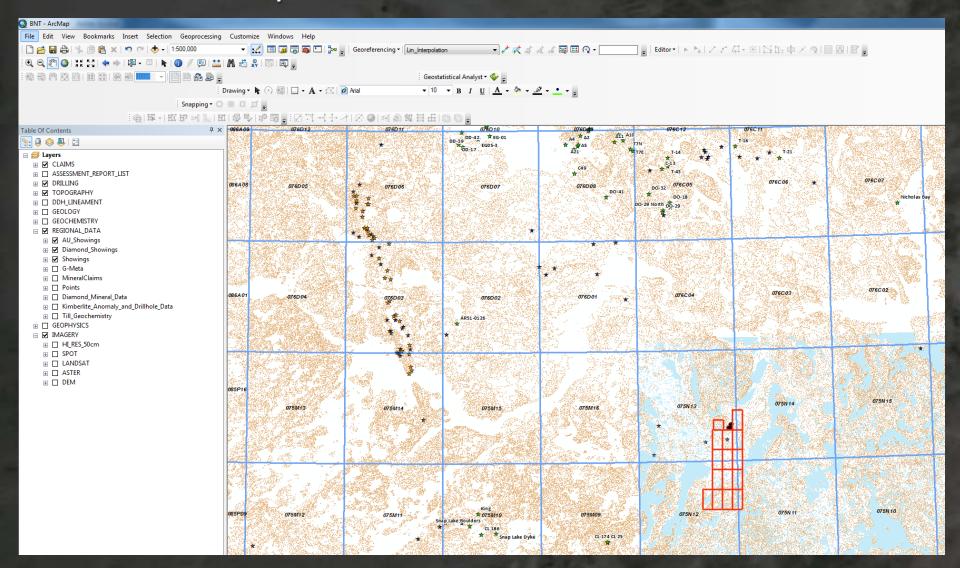
Highest – 7.16 g/t

#### Cluster of > 1 g/t samples NW of Fox Lake drill area



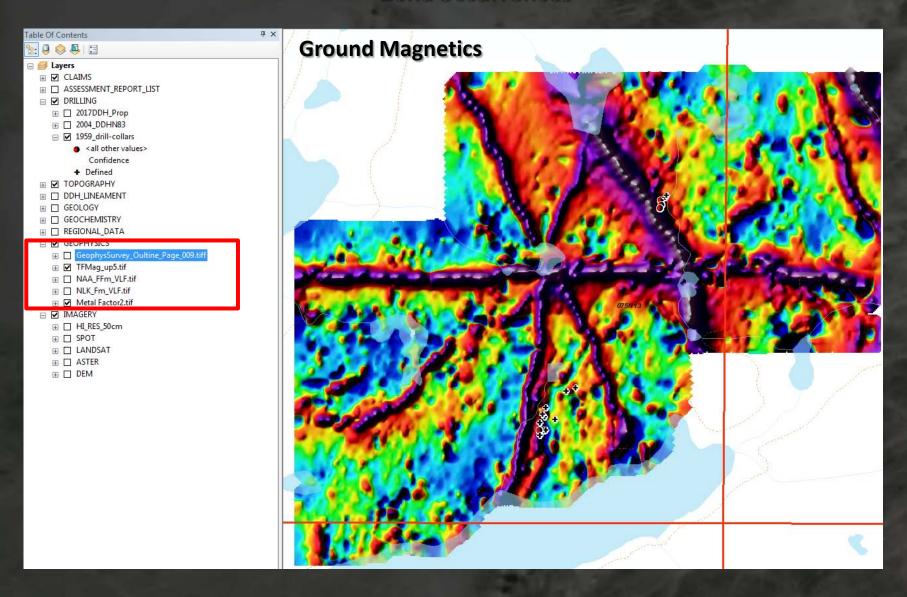
#### **REGIONAL GOVERNMENT DATA**

Regional government data – mineral showings, claims, diamond mineral data and till sample location data downloaded from NTGS website



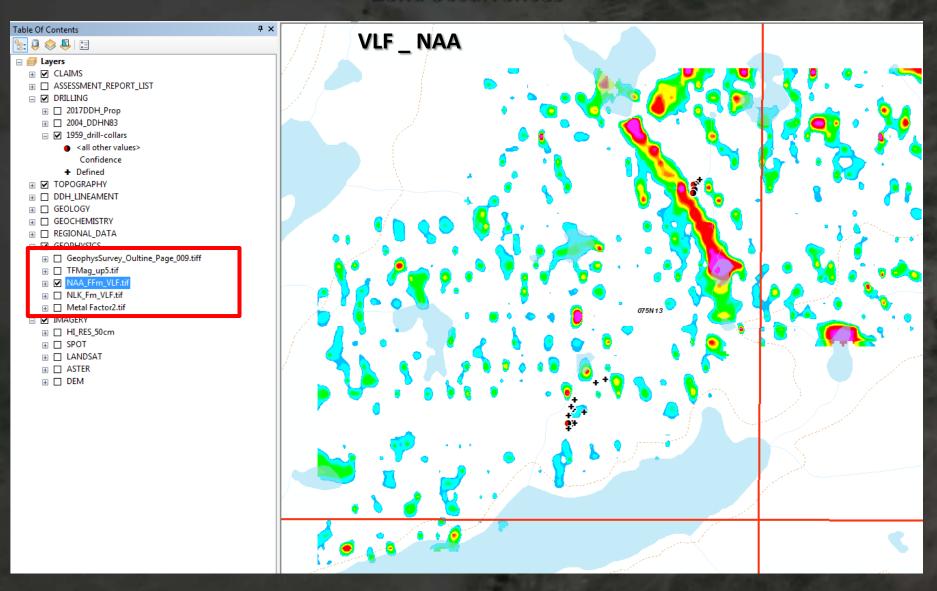
### **2016 Geophysical Survey Data**

VLF, IP and Magnetic ground surveys were conducted over the Fox Lake and Zena occurrences



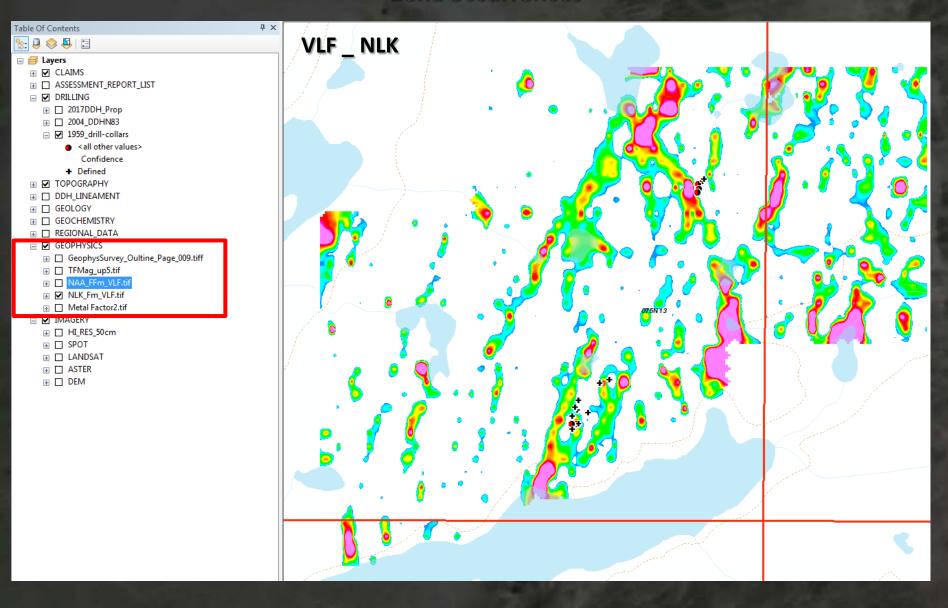
### **2016 Geophysical Survey Data**

VLF, IP and Magnetic ground surveys were conducted over the Fox Lake and Zena occurrences



### **2016 Geophysical Survey Data**

VLF, IP and Magnetic ground surveys were conducted over the Fox Lake and Zena occurrences



#### **SATELLITE DATA**

DEM, LANDSAT 8, ASTER, SPOT and Panchromatic 50 cm resolution data were compiled for the Fox Lake property

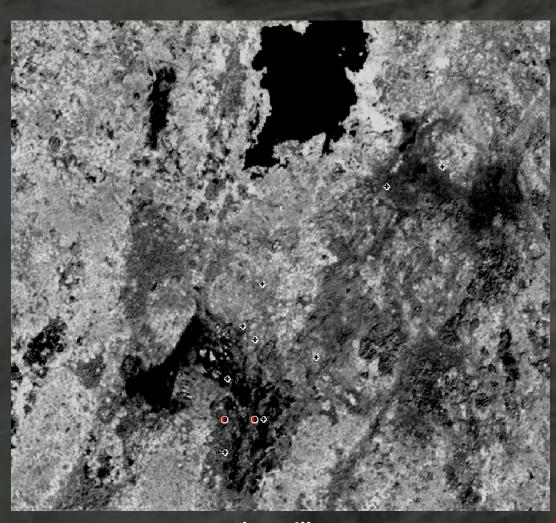
=	<b>~</b>	IM.	AGERY
	+		HI_RES_50cm
	_		SPOT
			spot_ortho_raw_index
		+	S5_11024_6336_20060803_p10_1_utm12.tif
		+	S5_10917_6336_20100714_p10_1_utm12.tif
		+	✓ S4_11005_6402_20060820_p10_1_utm12.tif
		+	▼ S4_10909_6336_20070624_p10_1_utm12.tif
			LANDSAT
		+	☐ BNT_LS8
		+	☐ Vegetation
		+	GOSSAN
		+	☐ FERROMAG
		+	☐ CLAY
		+	☐ SILICA
			☐ RGB_NoMask
			☐ RGB_Mask
		_	☐ Panchromatic
			ASTER
			☐ VegMask_Aster
		+	☐ SILICA
		+	GOSSAN
		+	☐ BNT_ARGILLIC
			☐ BNT_PHYLLIC
			☐ BNT_PROPYLITIC
			▼ Ph_Ar_Pr_RGB
			☐ BNT_VNIR_SWIR.img
	_		DEM
		+	✓ cdem_hillshade_161122_221049.tif
		+	■ BNT_DEMMOS.img

Surface reflectance data for both the Landsat 8 and ASTER data were processed to identify vegetation, gossans, silica, ferromagnesian minerals and clay minerals

These data will help in target generation elsewhere within the BNT project area

# **High Resolution 50cm Satellite Data**

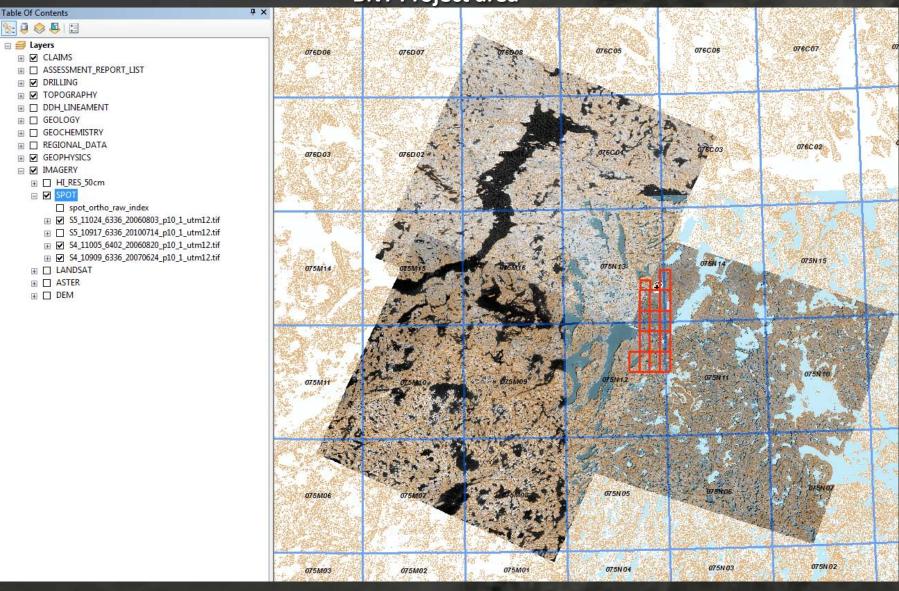




**Fox Lake Drill Area** 

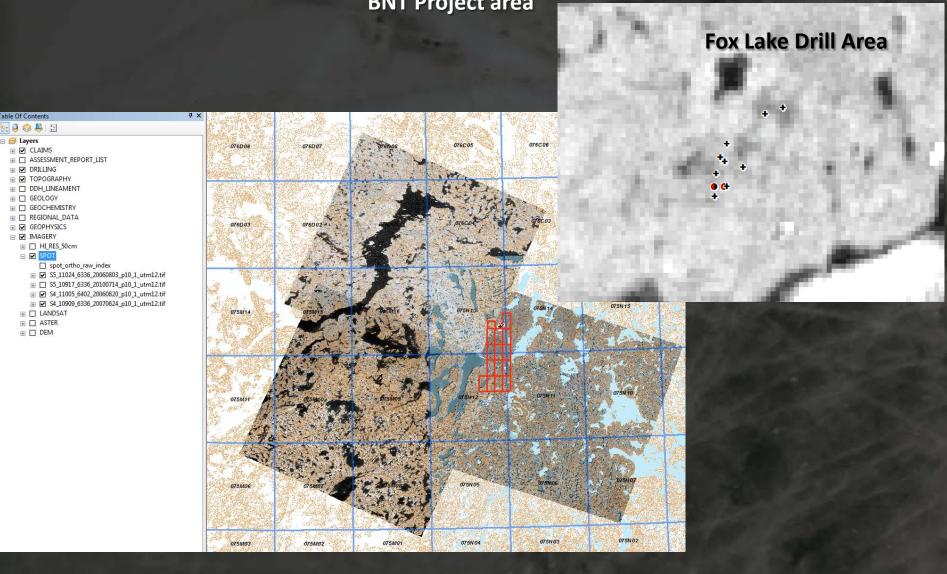
### **Spot 4 and 5 Panchromatic Satellite Data**

Three Spot scenes Spot 4 and Spot 5, 10m spatial resolution cover the BNT Project area



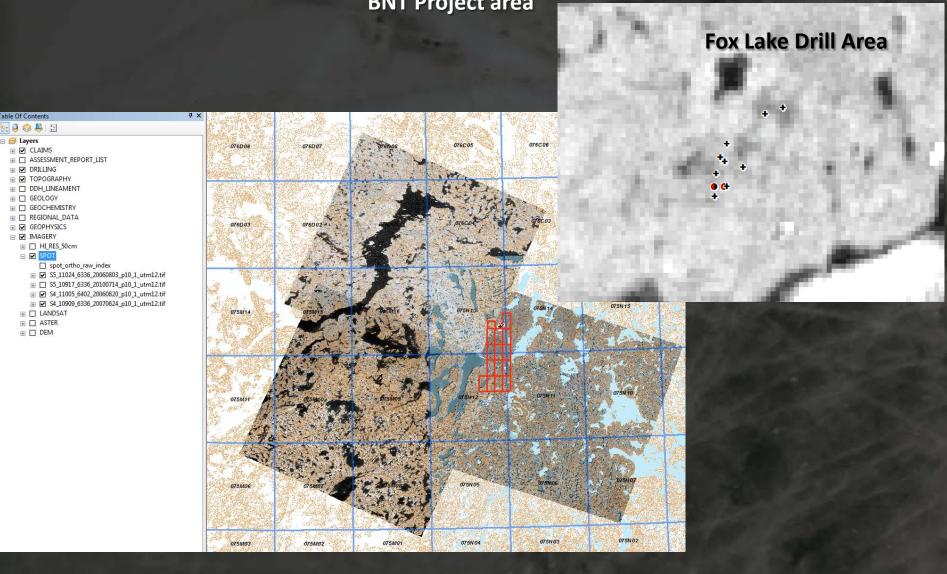
# **Spot 4 and 5 Panchromatic Satellite Data**

Three Spot scenes Spot 4 and Spot 5, 10m spatial resolution cover the BNT Project area

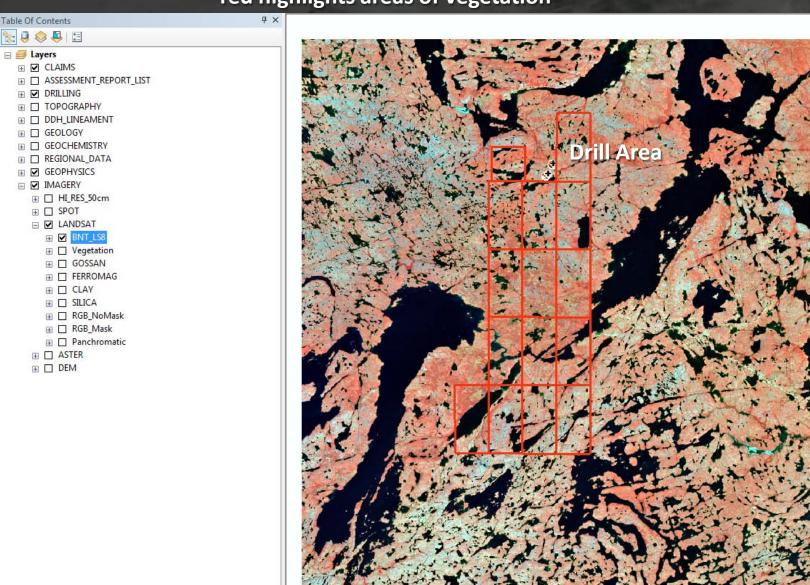


# **Spot 4 and 5 Panchromatic Satellite Data**

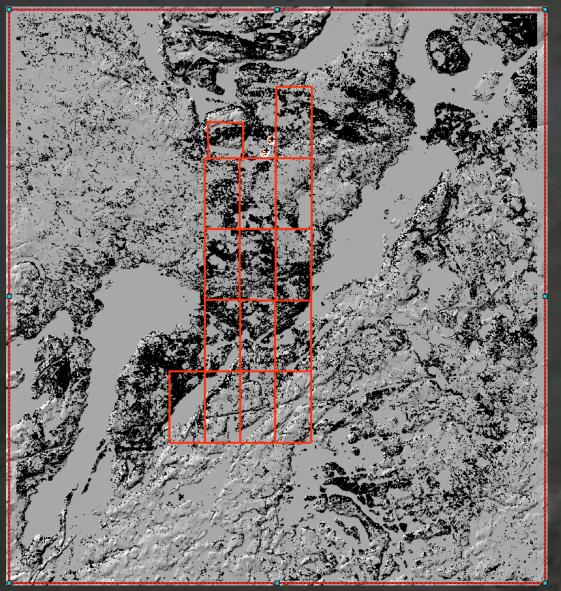
Three Spot scenes Spot 4 and Spot 5, 10m spatial resolution cover the BNT Project area



Landsat 8 5-4-2 false colour composite trimmed to project area; red highlights areas of vegetation



Landsat 8 Vegetation Mask – Vegetation distorts satellite reflectance data for Gossan and Clays. Areas of high vegetation must be masked from reflectance data



Black are areas of vegetation cover

■ ✓ IMAGERY

HI\_RES\_50cm

SPOT

LANDSAT

BNT\_LS8

Vegetation

GOSSAN

FERROMAG

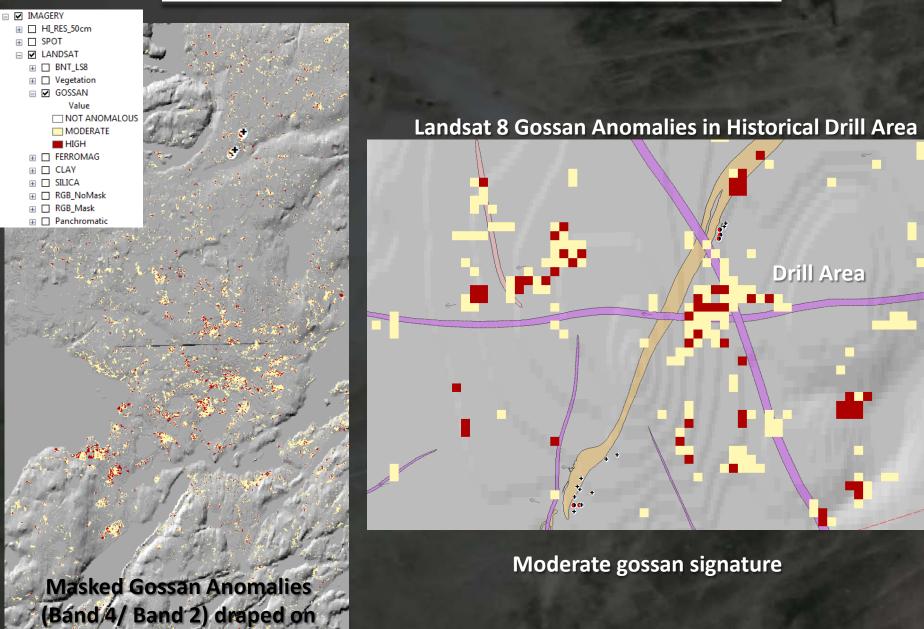
CLAY

RGB\_NoMask

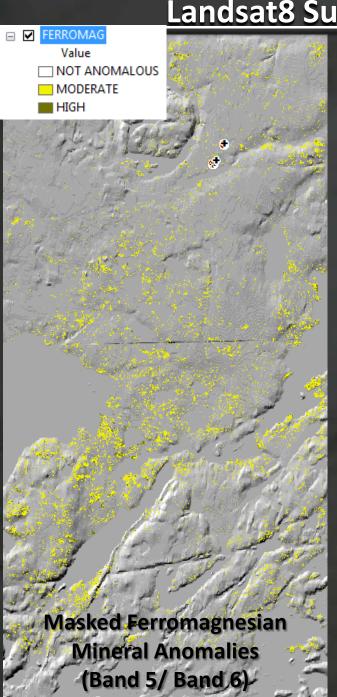
RGB\_Mask

RGB\_Mask

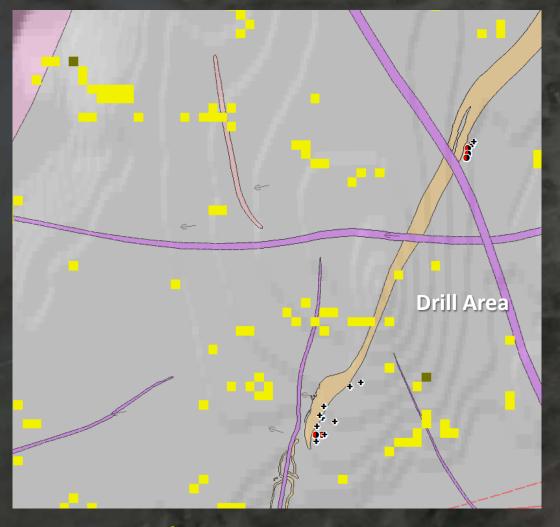
Panchromatic



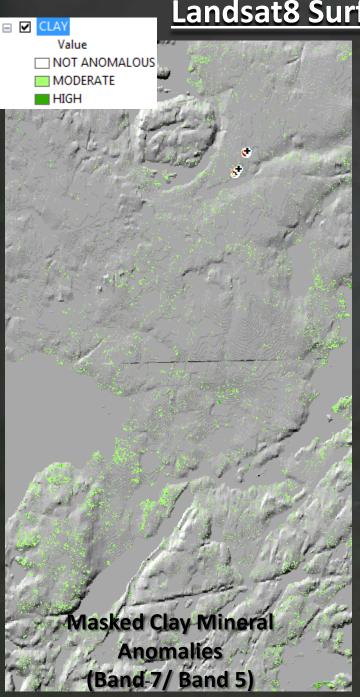
Hillshade DEM



Landsat 8 Ferromagnesian Anomalies in Historical Drill Area



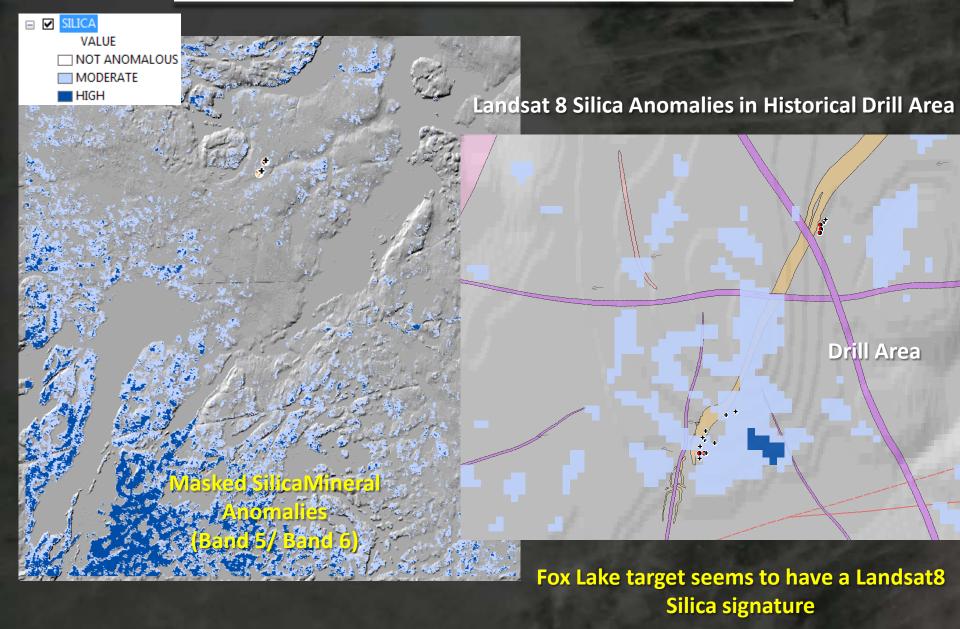
No Significant Ferromagnesian Signature



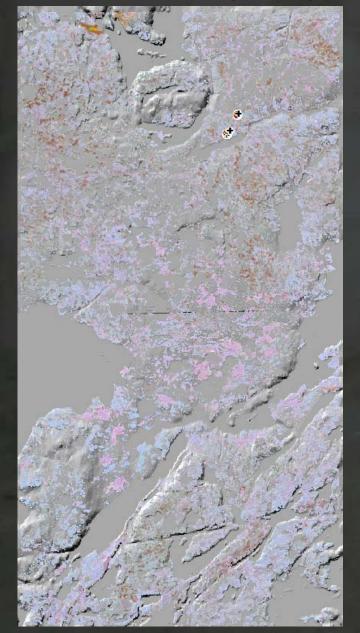
#### **Landsat 8 Clay Anomalies in Historical Drill Area**

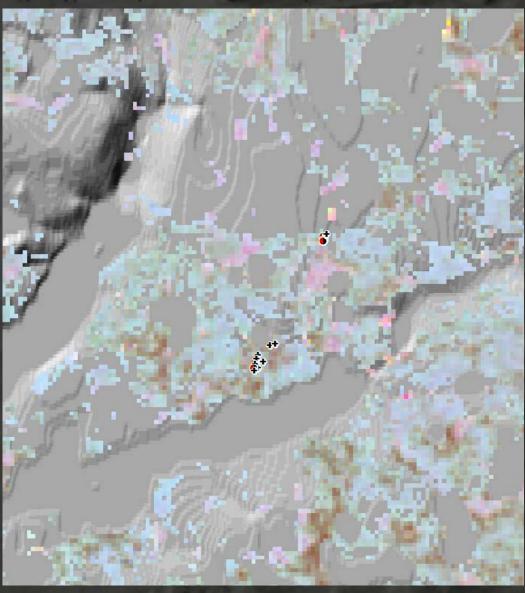


**No Significant Clay Signature** 



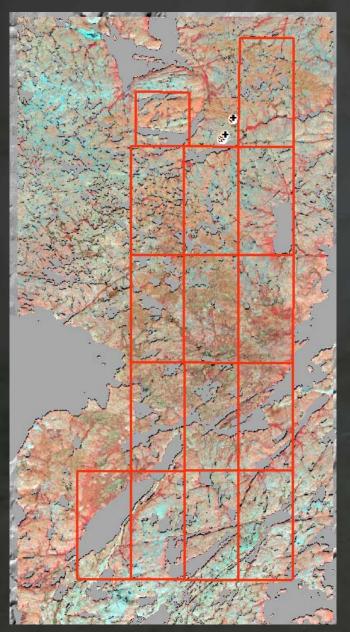
Landsat 8 Red (Gossan) Green (Clay) Blue (Ferromagnesian) False Colour Composite

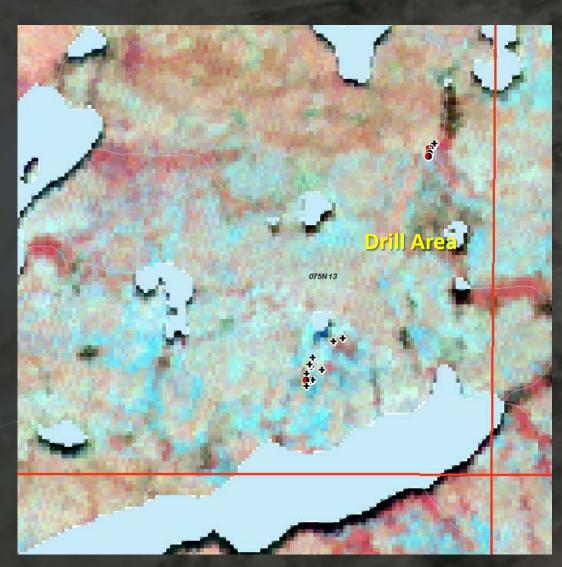




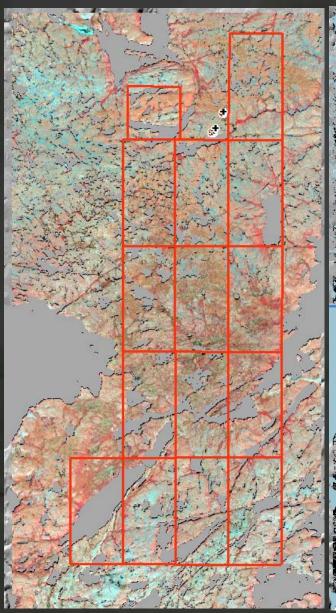
**Red-Brown colour –local gossans** 

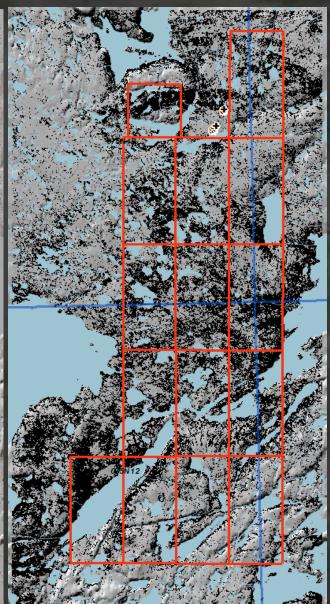
3-2-1 ASTER False Colour Composite: Red shows areas with more vegetation



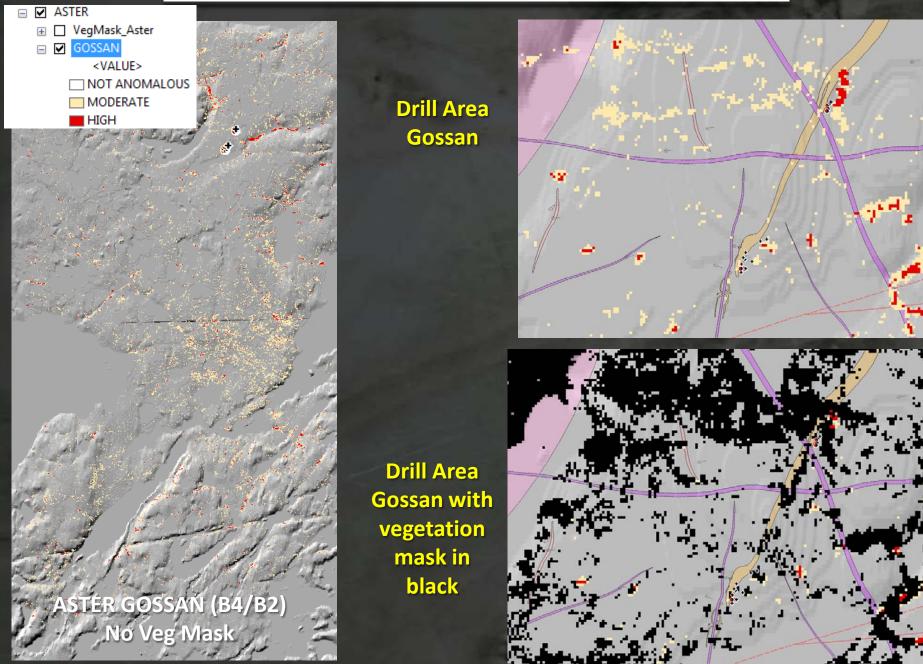


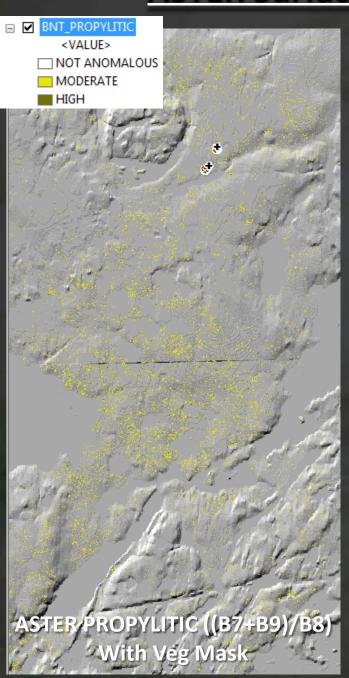
**Vegetation Dense Areas - Black** 

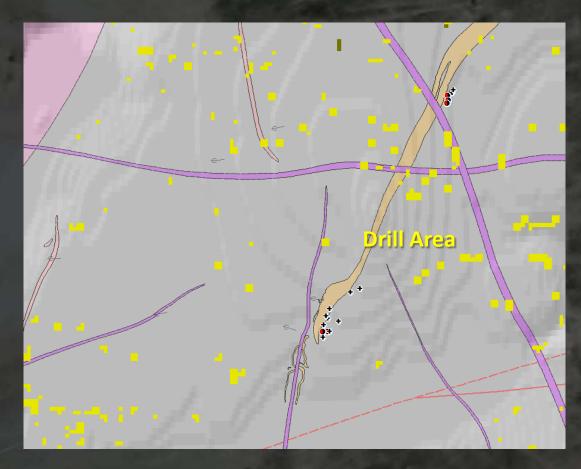




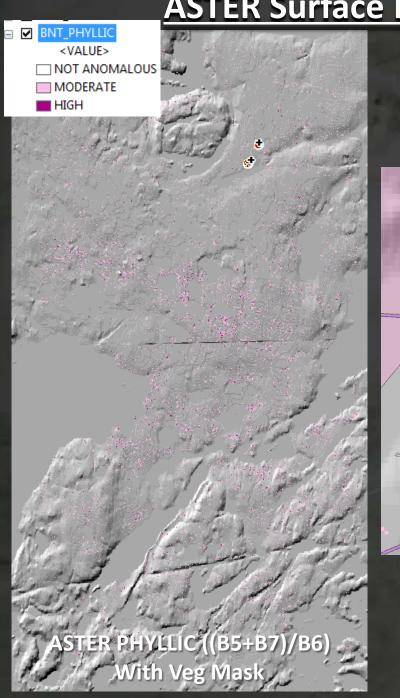






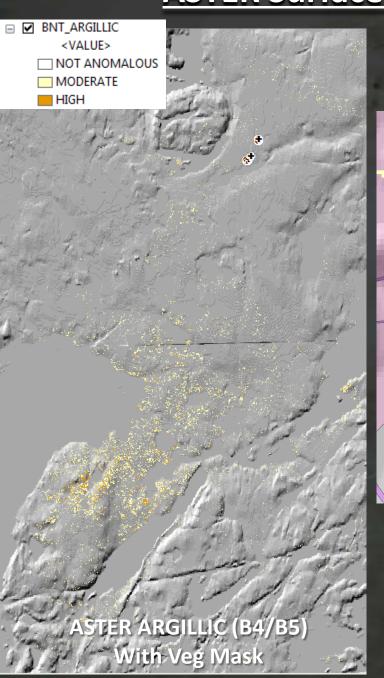


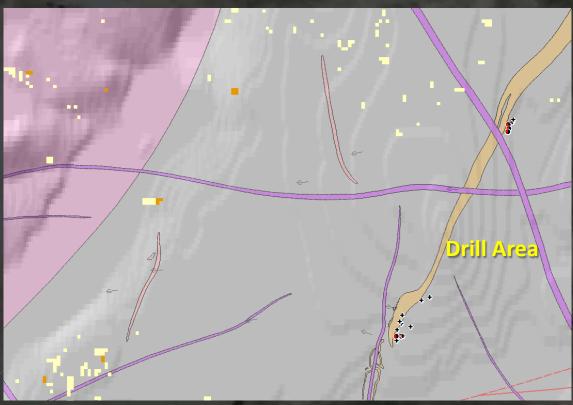
**No Significant Propylitic Alteration signature** 



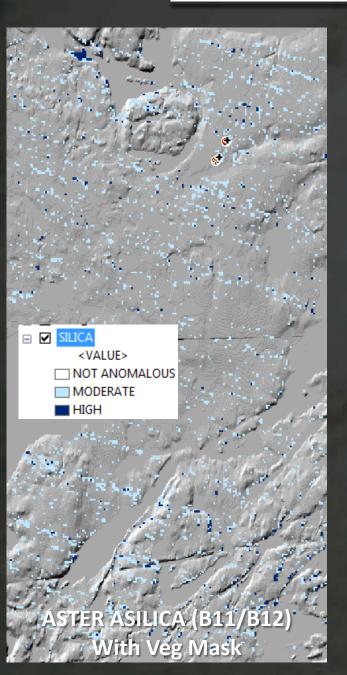


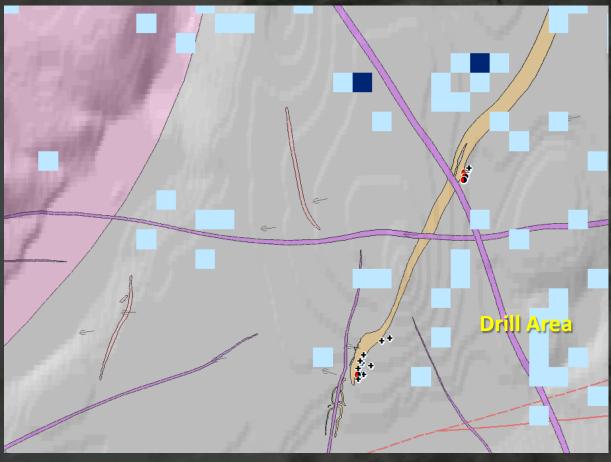
No Significant Phyllic Alteration signature Associated with gold zones



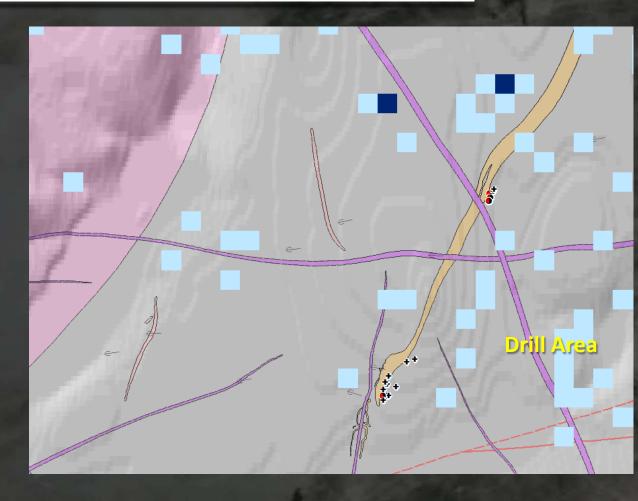


No Significant Argillic Alteration signature Associated with gold zones



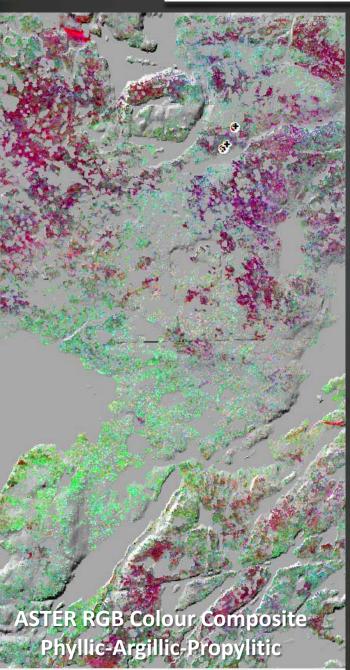


**Ambiguous Silica signature** 



**Ambiguous Silica signature** 

ASTER ASILICA (B11/B12)
With Veg Mask





RGB Composite – predominantly reflecting
Different clay compositions in
metasedimentary units

# **DEM DATASETS**

Two DEM datasets are provided in the BNT ArcGIS workspace

1. Hillshade DEM (http://ftp.geogratis.gc.ca/pub/nrcan\_rncan/elevation/)

2. Mosaicked DEM

