

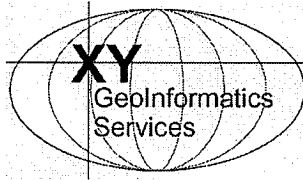
**Whites Point Quarry Project  
GeoSpatial Data Comparison & Compilation**

Completed for the Bilcon of Nova Scotia Corporation.

000139

Completed by Pierre L. Gareau of XY Geoinformatics Services

---



XY Geoinformatics Services  
28 Crichton Park Road  
Dartmouth, N.S.  
B3A 2N8 Canada  
Email: xygis1@hotmail.com

## **Whites Point Quarry Project GeoSpatial Data Comparison & Compilation**

### **Executive Summary**

In April 2005, XY Geoinformatics Services (XYGIS) was contracted by the Bilcon of Nova Scotia Corporation (Bilcon NS) to provide GIS consulting services for the comparison and compilation of digital geospatial data in support of Bilcon NS' proposed Whites Point Quarry project. The data sets to be compiled and compared consisted of a GeoTiff of multibeam data, bathymetric contours and soundings, grab sample stations, sidescan sonar tracts and imagery, and surficial geology. The comparison component of the contract was to determine whether the multibeam data overlapped spatially with any of the other data sets provided for this contract. The data sets were successfully imported and compiled in a Geographic Information System (GIS) environment. Through visual inspection of the compiled data, it was determined that although the multibeam data did overlap with the map extents of the other data sets, it did not overlap with the data represented within those maps (bathymetric contours & soundings, grab samples, sidescan sonar tracks and images, and surficial geology). The multibeam data is approximately 200 meters W-NW of the other data sets. Several final maps have been generated and delivered to Bilcon NS in PDF format, as requested by the client.

### **Data Sources**

The multibeam GeoTiff (a georeferenced Tiff image file) used in this contract was provided to XY GIS by the GSCA and represents a 5 meter grid of the data (processed and then exported out of the GRASS environment). The source of the Geotiff is a multibeam data set which was collected by the GSCA in June 16-22, 1999. The vessel used during the survey was the C.S.S. Frederick G. Creed. "The C.S.S. Frederick G. Creed is a 20 metre long SWATH (Small Water Area Twin Hull) vessel equipped with a Simrad EM1000 multibeam bathymetry system. The Creed surveys at speeds of 12-20 knots (19-36 km/hr), in water depths of 5-800 metres. The EM1000 multibeam bathymetry system provides 60 individual soundings in a swath up to 7.5 times the water depth." (Source: [http://cgca.mcan.gc.ca/oceanmapping/multibeam/vessels\\_e.php](http://cgca.mcan.gc.ca/oceanmapping/multibeam/vessels_e.php)). The multibeam GeoTiff was exported with a UTM, Zone 20 NAD83 projection.

All other data (bathymetric contours and soundings, grab sample stations, sidescan sonar tracks and images, and surficial geology) was provided by Bilcon NS. Three PDF (Adobe Portable Document Format) files

(0213\_BATHYMETRY\_REV\_600dpi.pdf, 0213\_SURFICIAL\_REV1\_600dpi.pdf, grabsanplefieldnotes.pdf) were emailed to XY GIS. Both files 0213\_BATHYMETRY\_REV\_600dpi.pdf and 0213\_SURFICIAL\_REV1\_600dpi.pdf consisted of maps generated by Canadian Seabed Research Ltd (CSR). These maps were not digitally georeferenced and therefore could not be directly imported into a GIS environment. PDF file grabsanplefieldnotes.pdf consisted of a spreadsheet with attribute information (including XY coordinates in UTM Zone 19 NAD83 projection) of each grab sample acquired by CSR. Both maps provided did contain a graticule of geospatial reference points (tics). The geospatial referencing systems used for the maps was UTM Zone 19, NAD83. The PDF files were converted to JPEG image files and them georeferenced within a GIS environment with and RMS error of less than 0.05 meters. The grab sample location information was imported into a GIS environment, where the accompanying attribute information was joined.

### Acknowledgements

Thanks to Russell Parrott of the Geological Survey of Canada (Atlantic) for the use of the 1999 multibeam GeoTiff of Sandy Cove, NS. Also, thanks to Gordon Fader (Retired) of the Geological Survey of Canada for guidance regarding the scope of this contract.

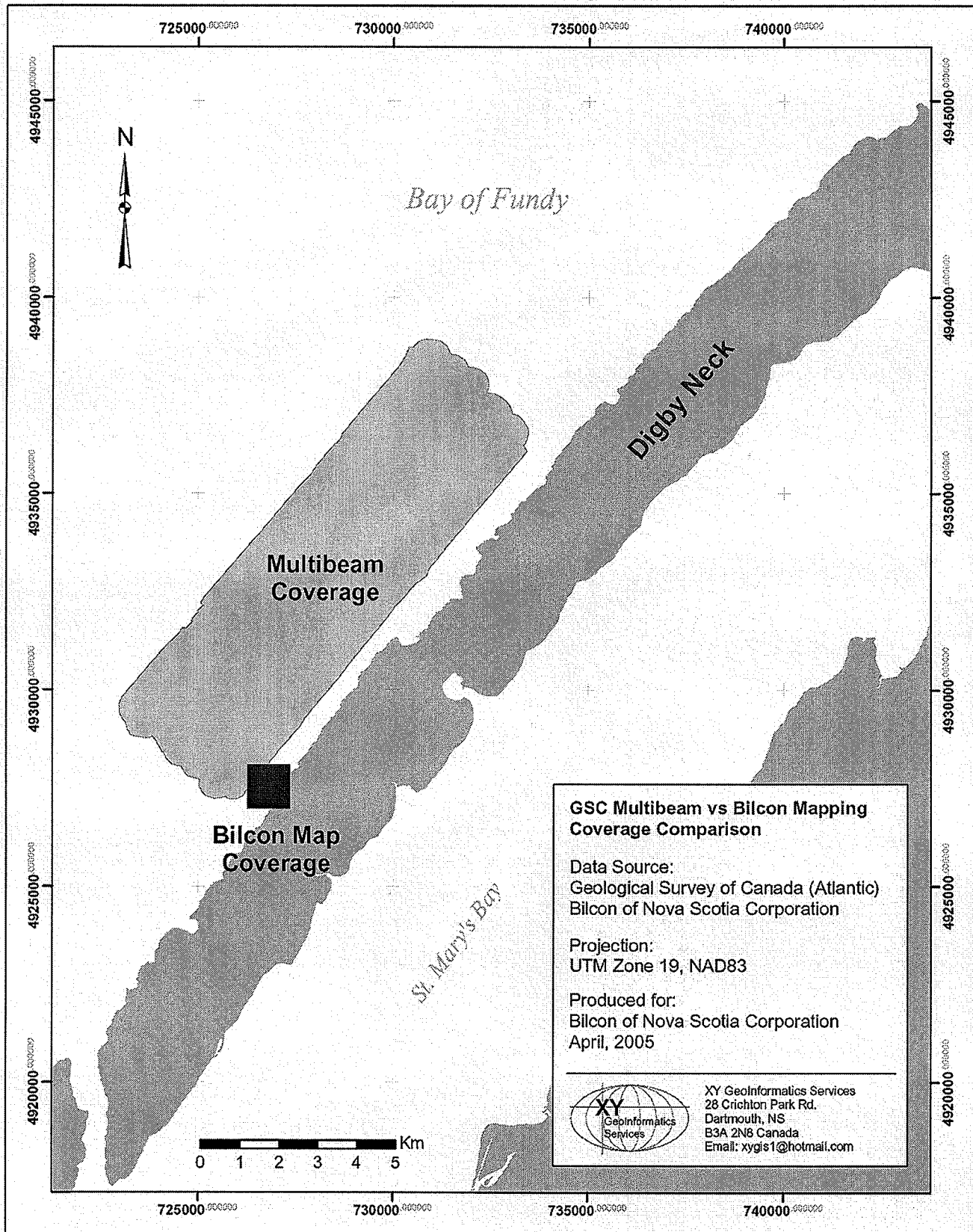
### Deliverables

A CD containing several PDF files of the final map products and this report. A hard copy of this report and colour print outs of the final map products. The following lists the PDF files and their associated title on the map.

PDF File Name	Map Title
MultibeamvsBilconMapping_map1.pdf	Whites Point Quarry GeoSpatial Data Compilation, Map 1
MultibeamCSR_map2.pdf	Whites Point Quarry GeoSpatial Data Compilation, Map 1
BilconBathyRegd_map3.pdf	Whites Point Quarry GeoSpatial Data Compilation, Map 1
BilconBathyRegd_map4.pdf	Whites Point Quarry GeoSpatial Data Compilation, Map 1
BilconSurficialGeologyRedg_map5.pdf	Whites Point Quarry GeoSpatial Data Compilation, Map 1
BilconSurficialGeologyRedg_map6.pdf	Whites Point Quarry GeoSpatial Data Compilation, Map 1
BilconGrabSample_map7.pdf	Whites Point Quarry GeoSpatial Data Compilation, Map 1

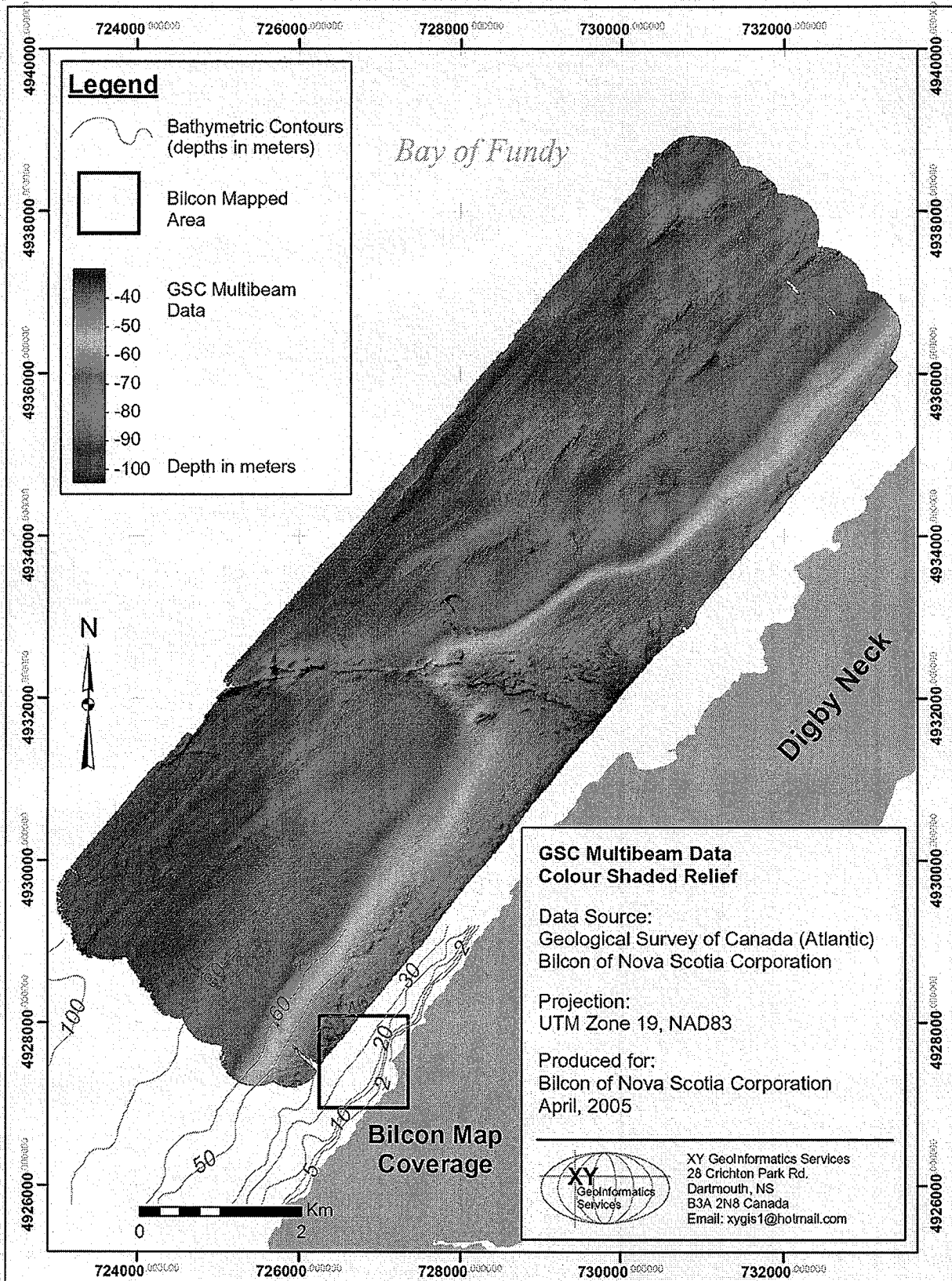
# White's Point Quarry

## GeoSpatial Data Compilation, Map 1



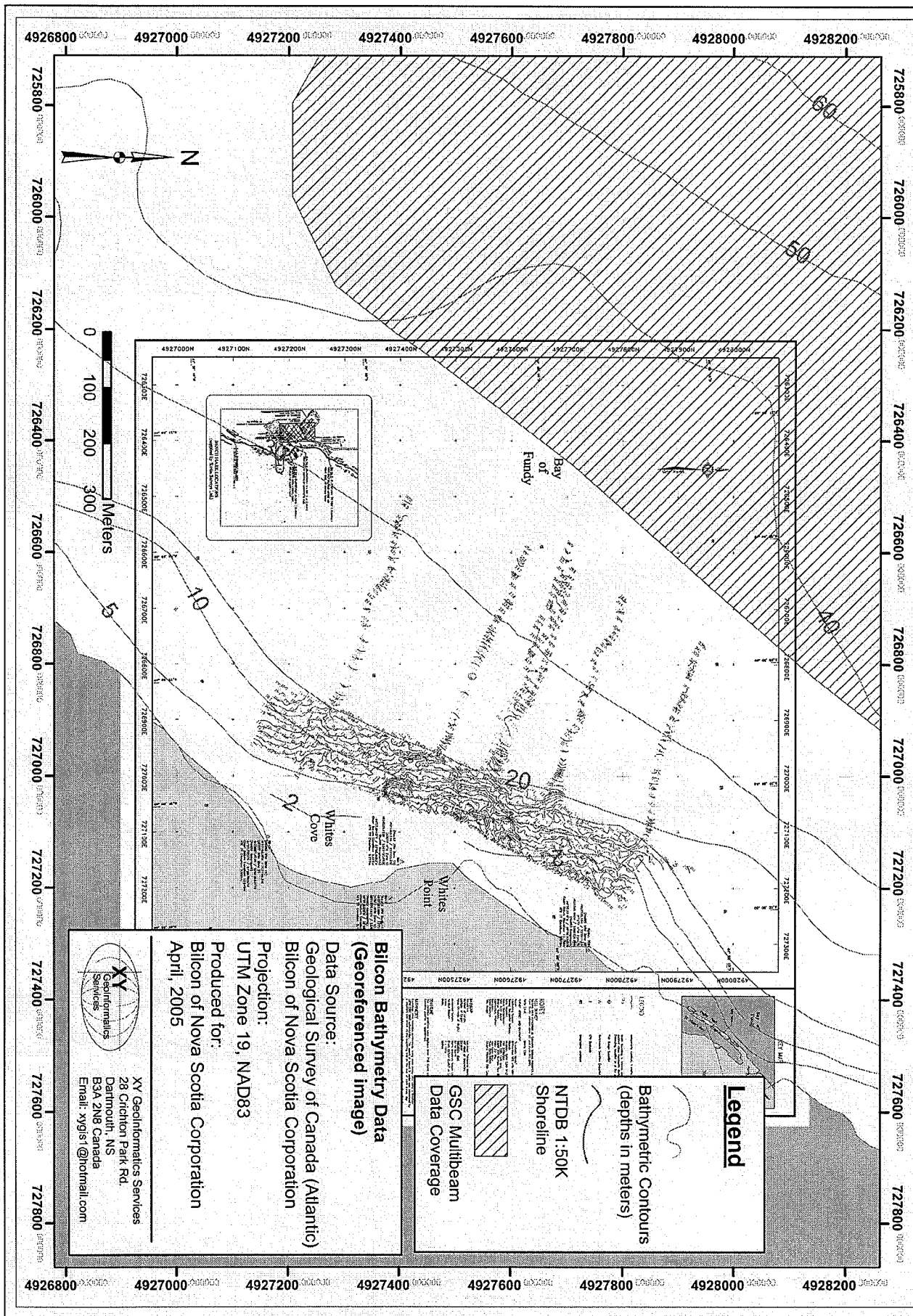
# White's Point Quarry

# GeoSpatial Data Compilation, Map 2



# White's Point Quarry

## Geospatial Data Compilation, Map 3



**Legend**

- Bathymetric Contours (depths in meters)
- NTDB 1:50K Shoreline
- GSC Multibeam Data Coverage

**Bilcon Bathymetry Data**  
(Georeferenced image)

Data Source:  
Geological Survey of Canada (Atlantic)  
Bilcon of Nova Scotia Corporation

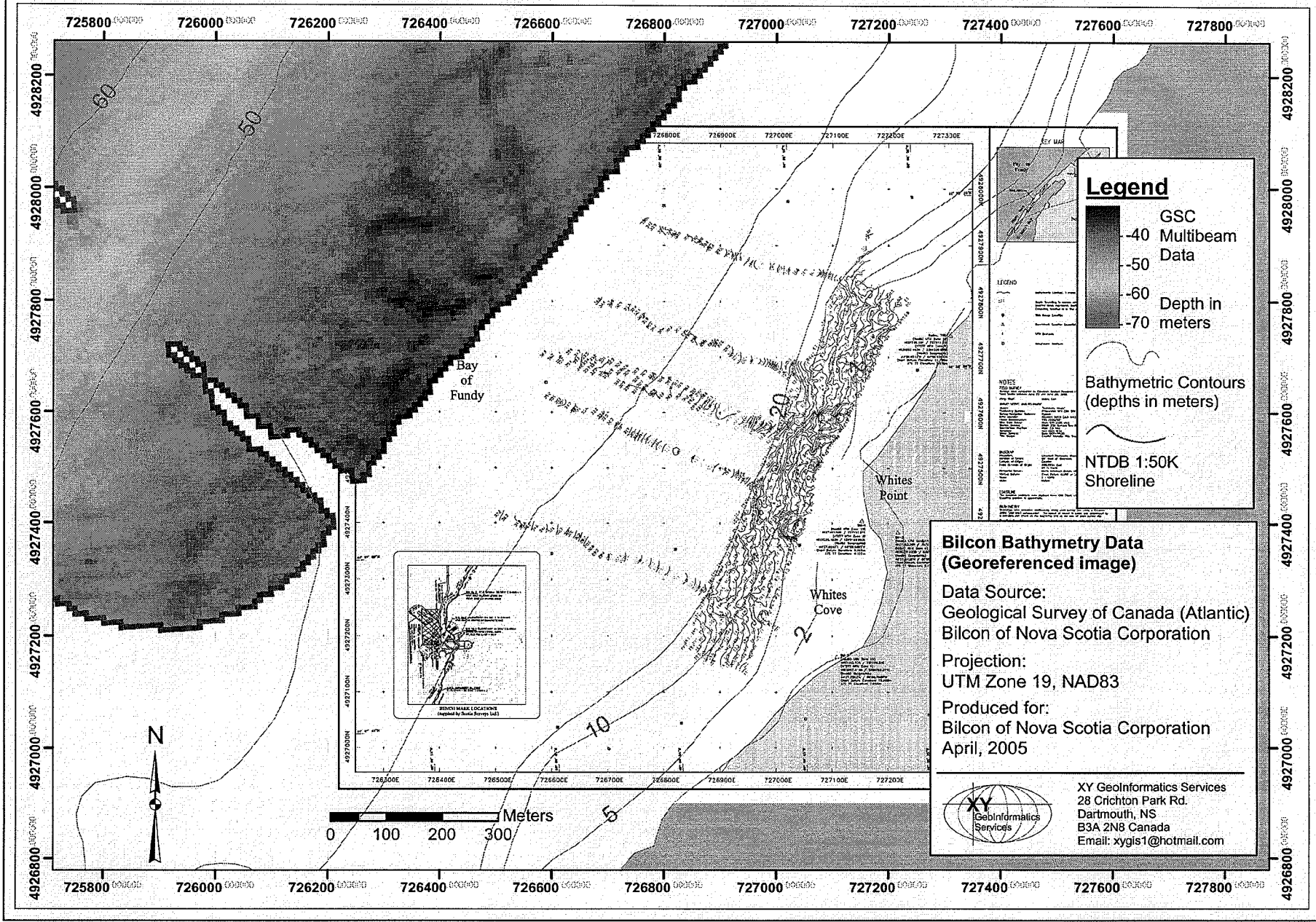
Projection:  
UTM Zone 19, NAD83

Produced for:  
Bilcon of Nova Scotia Corporation  
April, 2005

**XV Geoinformatics Services**  
28 Crichton Park Rd.  
Dartmouth, NS  
B3A 2N6 Canada  
Email: xygis1@hotmail.com

# White's Point Quarry

## GeoSpatial Data Compilation, Map 4



**Legend**

- GSC Multibeam Data
- 40
- 50
- 60
- 70

Depth in meters

Bathymetric Contours (depths in meters)

NTDB 1:50K Shoreline

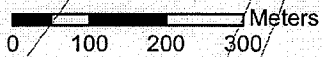
**Bilcon Bathymetry Data (Georeferenced image)**

Data Source:  
Geological Survey of Canada (Atlantic)  
Bilcon of Nova Scotia Corporation

Projection:  
UTM Zone 19, NAD83

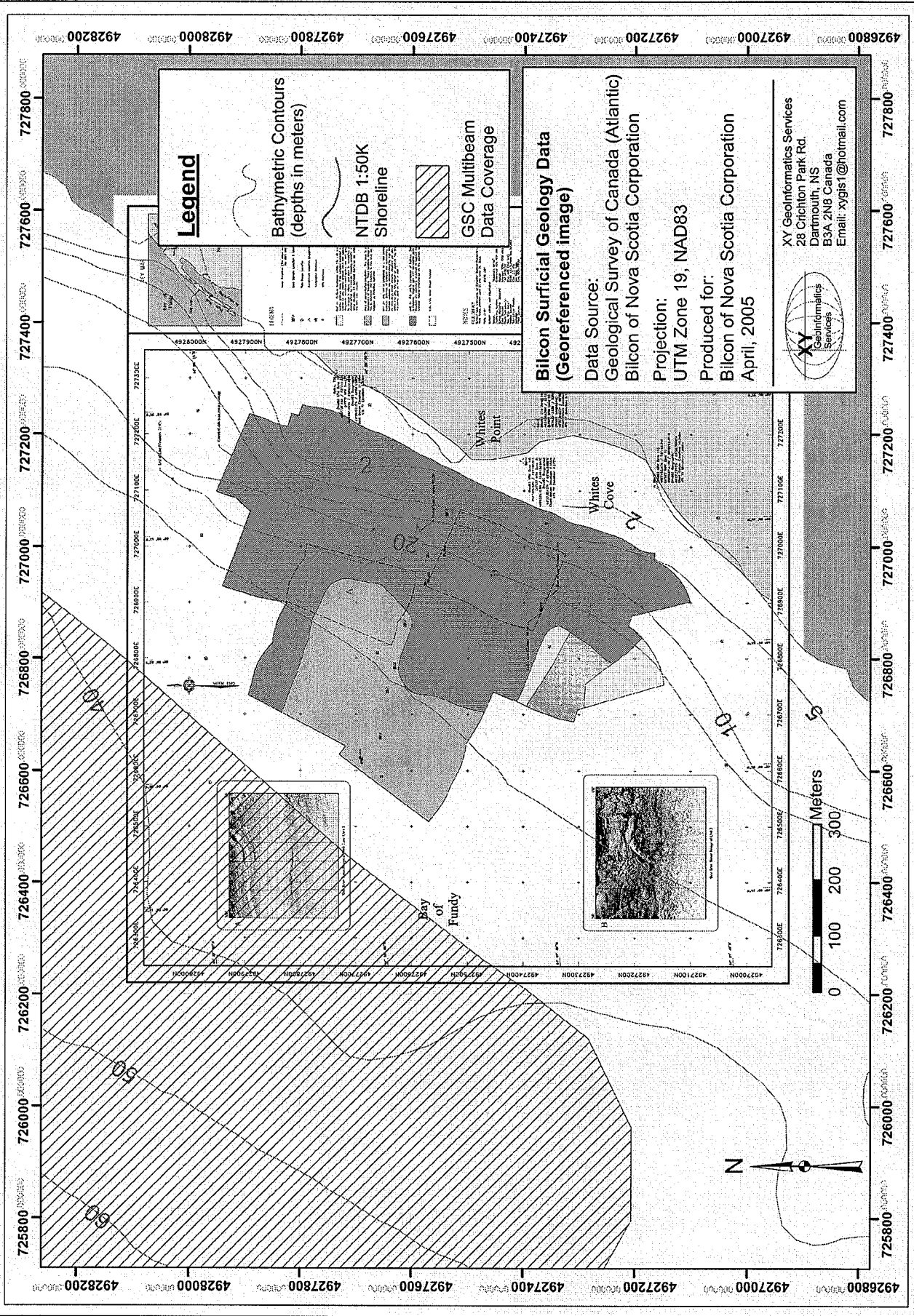
Produced for:  
Bilcon of Nova Scotia Corporation  
April, 2005

XY Geoinformatics Services  
28 Crichton Park Rd.  
Dartmouth, NS  
B3A 2N8 Canada  
Email: xygis1@hotmail.com



# White's Point Quarry

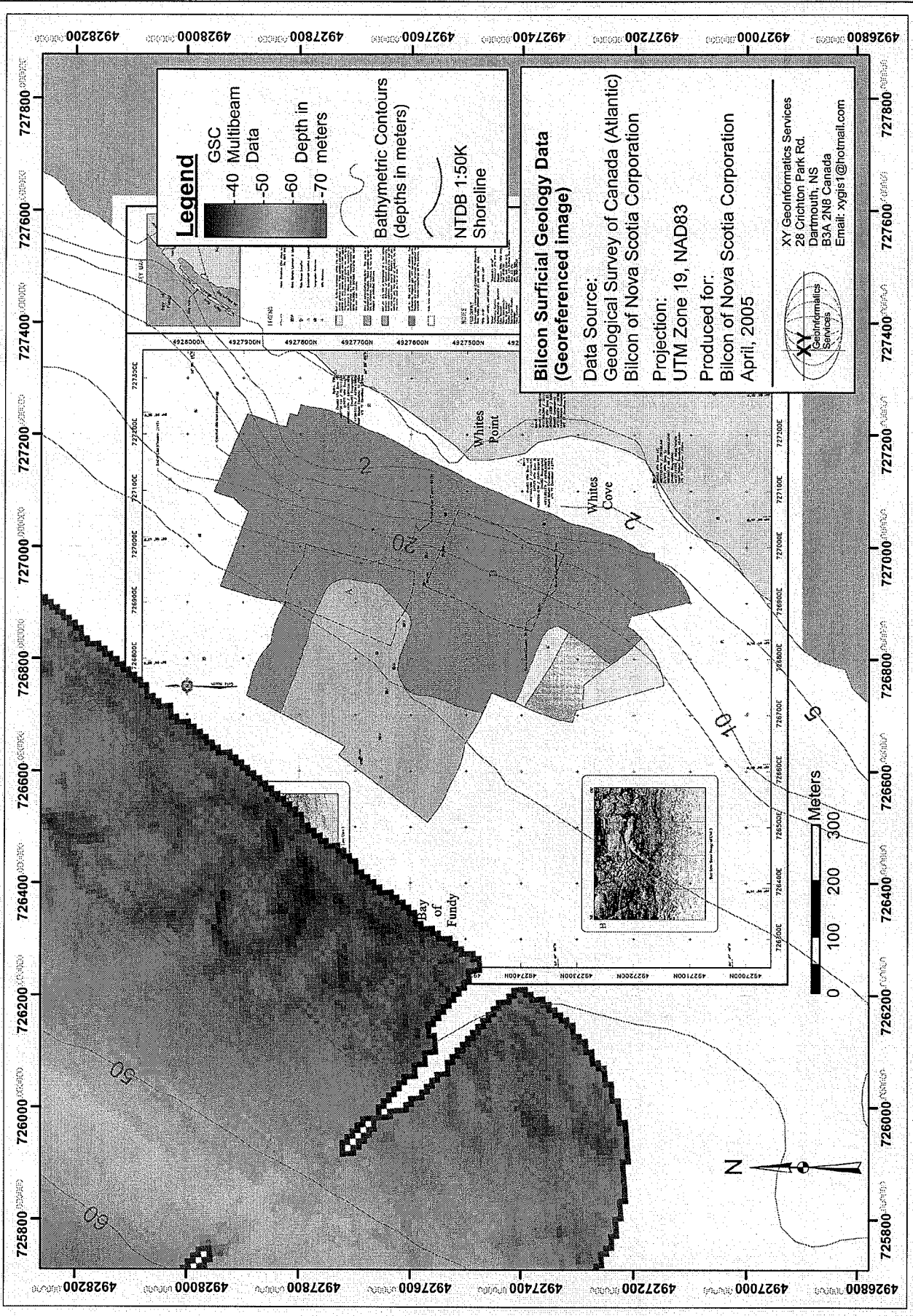
# Geospatial Data Compilation, Map 5





# White's Point Quarry

# GeoSpatial Data Compilation, Map 6



# White's Point Quarry

## GeoSpatial Data Compilation, Map 7

