Job No.	16971
Client	DPG Resources Australia Pty Ltd
Area of interest	Addition to Blue Mud Bay Project, Northern Territory

Data type	WorldView-2
Datum	WGS84
Projection	SUTM53

Orthorectification, Mosaicking and Pan-sharpening of Additional WorldView-2 Imagery
Blue Mud Bay Project, Northern Territory

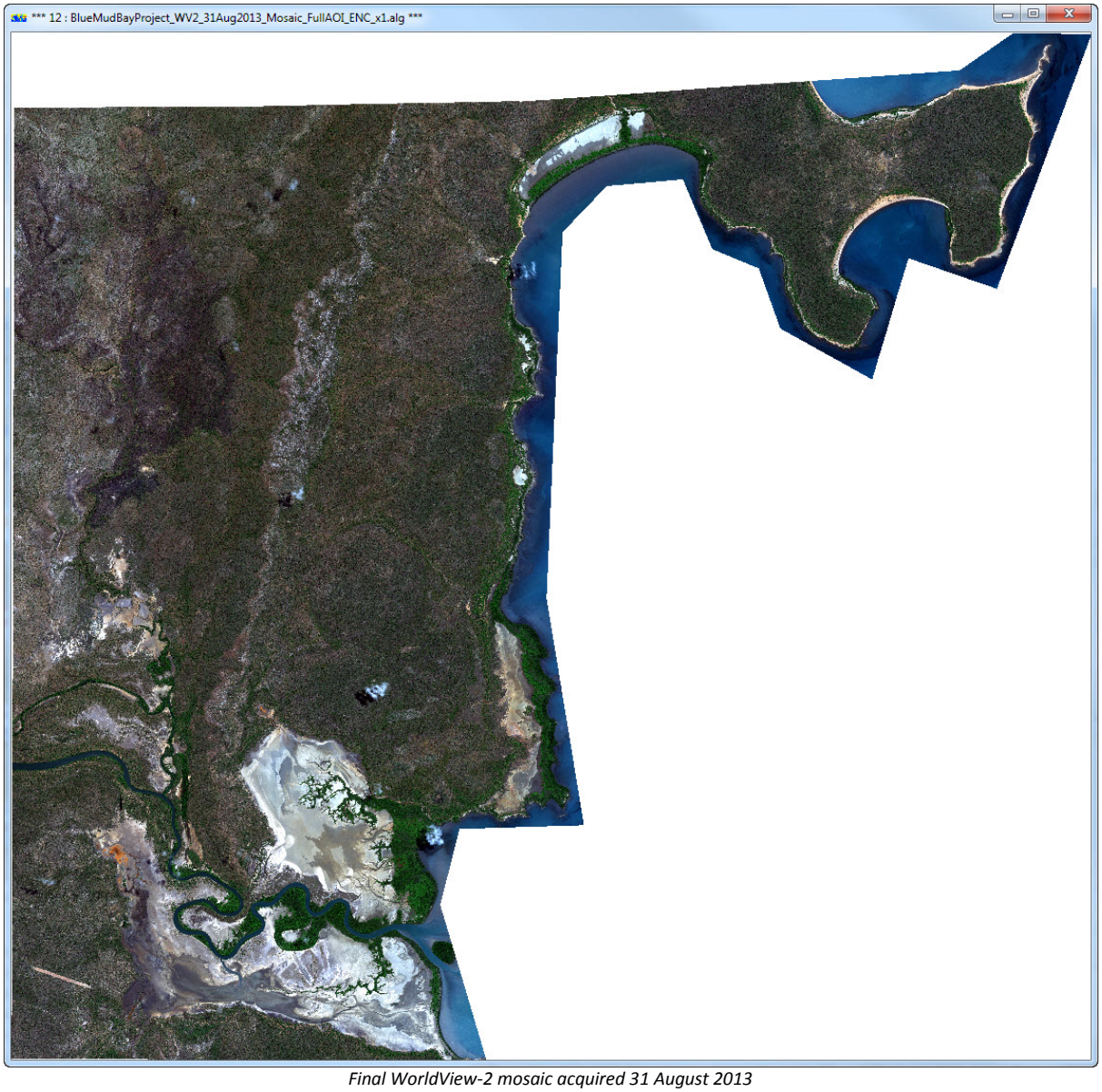
Raw Data:

- Archive Ortho-Ready Standard Level 2A WorldView-2 imagery
- 50cm resolution panchromatic, 2m resolution 4-band multispectral
- 2 swathes, 34 sq km
- Both swathes acquired 31 August 2013

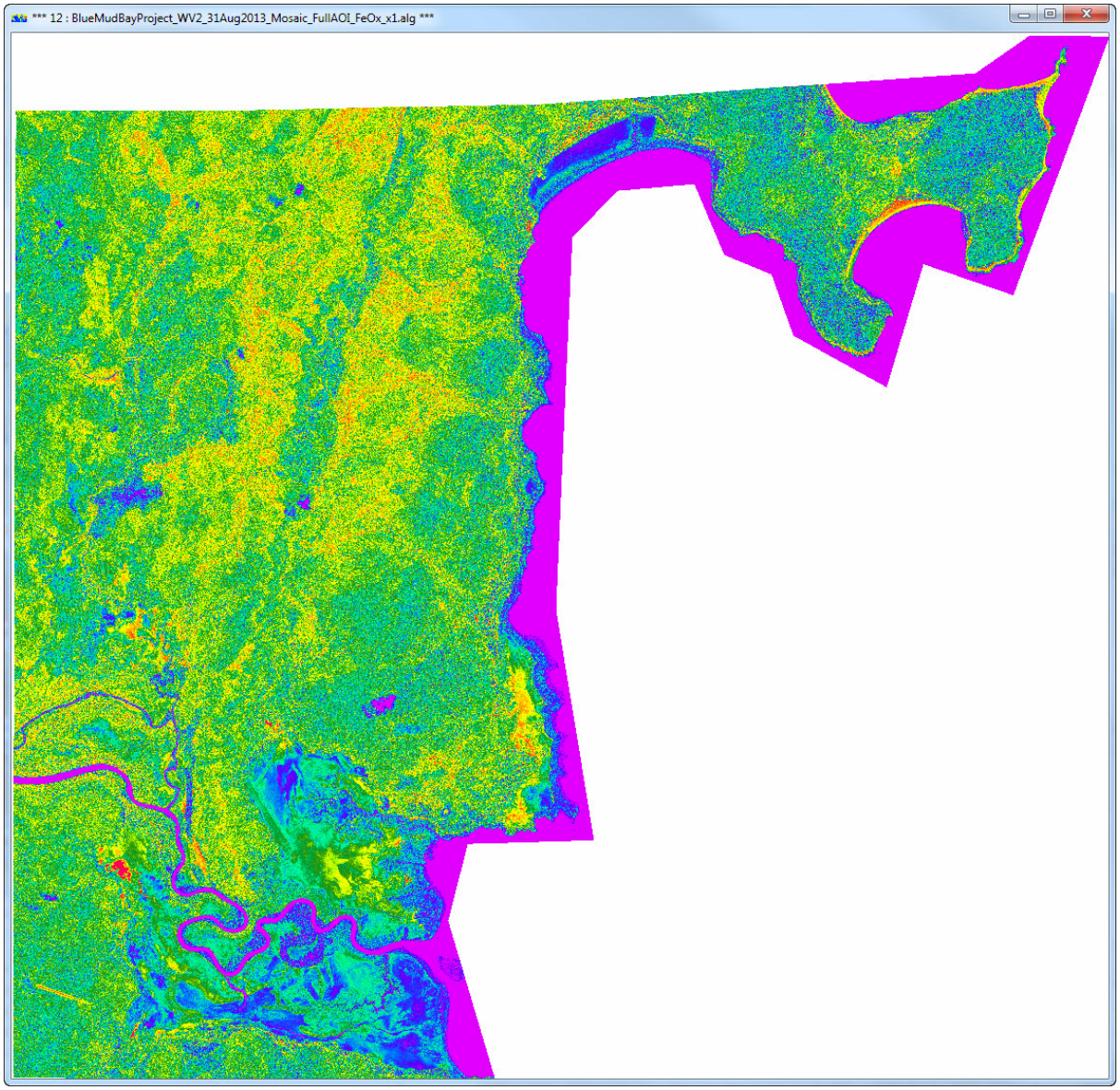
Processing:

- Raw TIFs imported into PCI Geomatica and assembled
- Orthorectified the panchromatic swathes using rational polynomial coefficients (RPCs) with XY control from the panchromatic mosaic processed under Geoimage Job#16820 and the Shuttle Radar Topography Mission (SRTM) DEM resampled to 5m for Z control; tie points collected on the overlap region
- Mosaicked the orthorectified panchromatic swathes and the panchromatic mosaic processed under Geoimage Job#16820 using PCI Geomatica
- Orthorectified the multispectral swathes using RPCs and XY control from the final panchromatic mosaic and Z control from the SRTM DEM resampled to 5m; tie points collected on the overlap region
- Mosaicked the orthorectified multispectral swathes and the multispectral mosaic processed under Geoimage Job#16820 using PCI Geomatica
- Pan-sharpened the final multispectral mosaic using the final panchromatic mosaic in PCI Geomatica
- Pan-sharpened data exported to ER Mapper

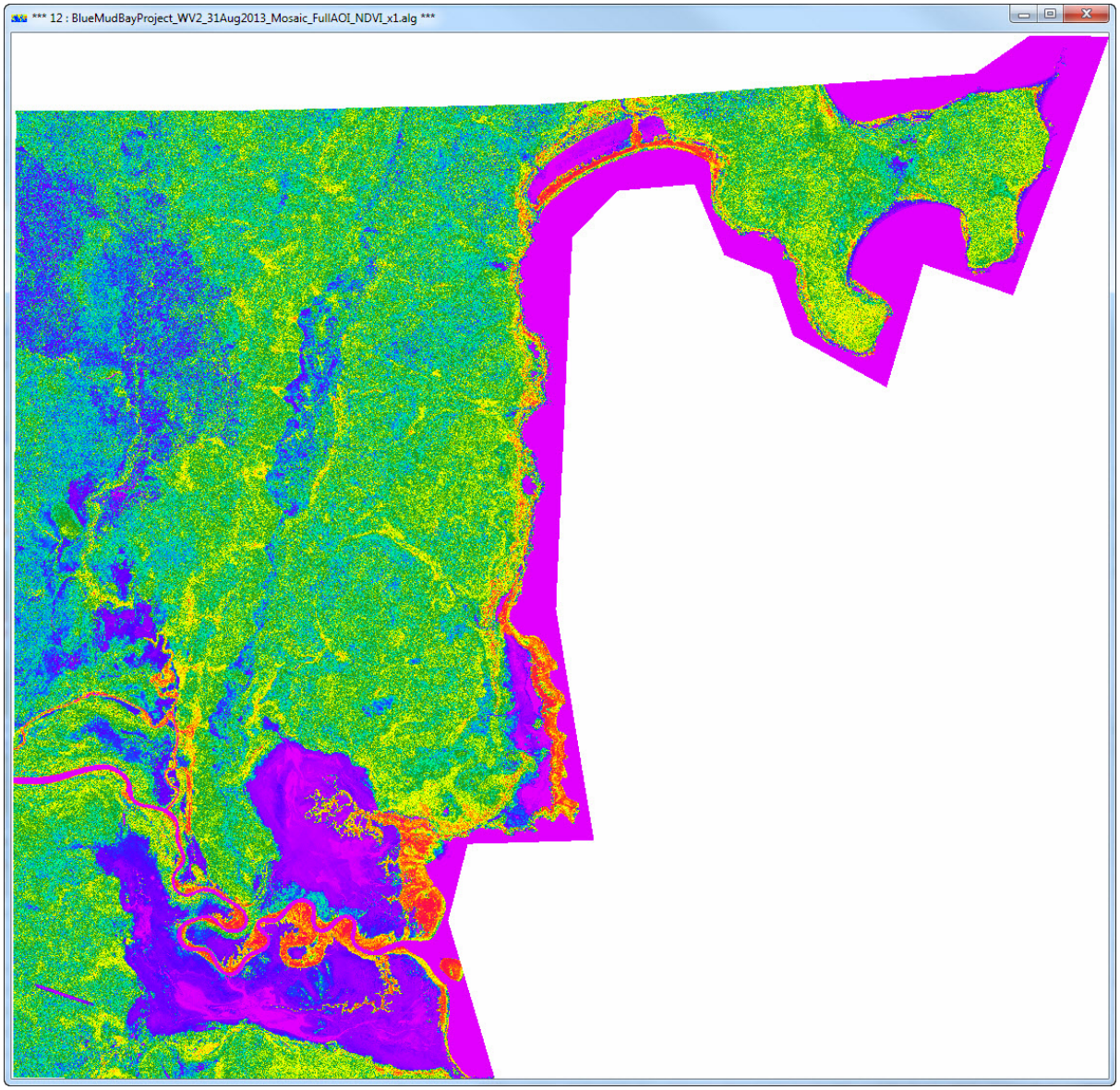
- Contrast enhanced, ECW format images of the pan-sharpened data prepared in ER Mapper. Stretch applied to the full area of interest (AOI). Same stretches as applied in Geoimage Job#16820 were used.
    - Natural colour (FullAOI NC)– visible red, visible green and visible blue in RGB
    - False colour (FullAOI FC)– NIR, visible red and visible green in RGB
    - Enhanced natural colour (FullAOI ENC) – visible red, visible green + NIR and visible blue in RGB
    - Pseudocoloured Fe oxide ratio (FullAOI FeOx)
    - Greyscale Fe oxide ratio (FullAOI Greyscale FeOx)
    - Pseudocoloured Normalized Difference Vegetation Index (FullAOI NDVI) – minimum value set to 0
    - Greyscale NDVI (FullAOI Greyscale NDVI) – minimum value set to 0
- Contrast enhanced, ECW format images of the pan-sharpened data prepared in ER Mapper. Stretch applied to the priority AOI. Same stretches as applied in Geoimage Job#16820 were used.
    - Natural colour (PriorityAOI NC)– visible red, visible green and visible blue in RGB
    - False colour (PriorityAOI FC)– NIR, visible red and visible green in RGB
    - Enhanced natural colour (PriorityAOI ENC) – visible red, visible green + NIR and visible blue in RGB
    - Pseudocoloured Fe oxide ratio (PriorityAOI FeOx)
    - Greyscale Fe oxide ratio (PriorityAOI Greyscale FeOx)
    - Pseudocoloured Normalized Difference Vegetation Index (PriorityAOI NDVI) – minimum value set to 0
    - Greyscale NDVI (PriorityAOI Greyscale NDVI) – minimum value set to 0
- Opacity layers added to all ECW format enhancements
- Arc world files and MapInfo TAB files are provided for the enhancements. There are two types of MapInfo TAB files i.e. one that points directly to the .ECW file and the other that defines a null transparency layer (see below notes).
    - The TAB files that point to the .ECW files directly are named the same as the enhancement. The filenames of the null transparency algorithms and the TAB files that point to these algorithms have a _ALG suffix.
    - The null values in the TAB files that point to the null transparency algorithms are set to transparent in MapInfo. To utilize the algorithms, the MapImagery plug-in is required. This is included in sub-directory MapImagery. Once installed, in MapInfo navigate to MapImagery -> MapImagery Options -> Supersampling and ensure that Supersampling is set to 1. WARNING : these TAB files will not work in MapInfo Version 11 and higher.



Final WorldView-2 mosaic acquired 31 August 2013
Enhanced natural colour – stretched applied to full AOI



Final WorldView-2 mosaic acquired 31 August 2013
FeOx ratio – stretched applied to full AOI



Final WorldView-2 mosaic acquired 31 August 2013
NDVI – stretched applied to full AOI

Area of interest used in PriorityAOI stretches

Products Supplied:

/ERMapper_BIL

- Un-enhanced UnSigned16BitInteger 4-band Multispectral imagery, ER Mapper BIL format (*BlueMudBayProject_WV2_31Aug2013_Mosaic_BGRN_SUTM53.ers*)
- Un-enhanced UnSigned16BitInteger Panchromatic imagery, ER Mapper BIL format (*BlueMudBayProject_WV2_31Aug2013_Mosaic_Pan_SUTM53.ers*)
- Un-enhanced UnSigned16BitInteger 4-band Pan-sharpened Multispectral imagery, ER Mapper BIL format (*BlueMudBayProject_WV2_31Aug2013_Mosaic_psBGRN_SUTM53.ers*)

/Enhancements

- Arc and MapInfo compatible, low compression (1:1), ECW format enhancements (*BlueMudBayProject_WV2_31Aug2013_Mosaic_FullAOI_ENC_x1.ecw etc.*)

/Algorithms

- ER Mapper BIL format display algorithms for the NDVI and FeOx ratio images

/Metadata

- *16971_Readme.pdf*
- Base.txt
- Metadata for these captures (*13AUG31013749-M2AS-053697945010_01_P002.IMD etc.*)

Image Details:

WorldView-2 Multispectral Mosaic:
Top Left Coordinate = 581094.00 metres E, 8518446.00 metres N
Cell Size = 2.00 metres
Number of Lines = 11970
Number of Pixels = 12562
Projection = SUTM53
Datum = WGS84

WorldView-2 Panchromatic Mosaic:
Top Left Coordinate = 581121.00 metres E, 8518405.50 metres N
Cell Size = 0.50 metres
Number of Lines = 47803
Number of Pixels = 50192
Projection = SUTM53
Datum = WGS84

WorldView-2 Pan-sharpened Multispectral Mosaic:
Top Left Coordinate = 581121.00 metres E, 8518405.50 metres N
Cell Size = 0.50 metres
Number of Lines = 47799
Number of Pixels = 50192
Projection = SUTM53
Datum = WGS84