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12 March 2013	18.3 mg/l	44.3 mg/l	A Charles	-	and the second s	and the second		
Survey Period Median	132 mg/l ^{Min}	Max	a the the type	1			aller and the	5 12 14
27 Feb - 2 May 2013	13.2 IIIg/1 3.2 mg/l	119.4 mg/l	and the first	Alical	As a and		A Company	S. Sash
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vpoint Details	WGS 1984 lat Elevation Distance to Horizon	:	E174°21'15.57" <i>S39°39'15.10"</i> 233m 59 km 10:45am, 12 March 2013	
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Data source: NIWA SSC Field measurements 2013

Horizontal Field of View (Main Image): 54.4° Camera: Nikon D800 Lens: 35mm f/2.0 Location data, including elevation derived from gps readings.



Date of Photography: 10:45am, 12 March 2013

SOUTH TARANAKI OFFSHORE SAND MINING PROJECT Site 15: Manawapou

Figure 5.19

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27 Feb - 2 May 2013		3.2 mg/l	119.4 mg/l			10. 17	the second		
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Estimated Instrument Site



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	84 lat n e to Horizon	:	E174°20'28.02" <i>S39°38'38.59"</i> 226m 58 km 10:45am, 12 March 2013	
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Data source: NIWA SSC Field measurements 2013

Horizontal Field of View (Main Image): 54.4° Camera: Nikon D800 Lens: 35mm f/2.0 Location data, including elevation derived from gps readings.



Date of Photography: 10:45am, 12 March 2013

SOUTH TARANAKI OFFSHORE SAND MINING PROJECT Site 15: Manawapou

Figure 5.20

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Instrument Site 15	880	m Offshore				
Instrument reading	SSC	16.3 mg/l				
10:45 12 March 2013	1	Min	Max			
21 hour modian	1		IV\dX			
24 hour median 12 March 2013	18.3 mg/l					
24 hour median 12 March 2013 Survey Period Median 27 Feb - 2 May 2013	18.3 mg/l 13.2 mg/l	9.79 mg/l Min	44.3 mg/l Max			



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Details

Data source: NIWA SSC Field measurements 2013

Horizontal Field of View (Main Image): 54.4° Camera: Nikon D800 Lens: 35mm f/2.0 Location data, including elevation derived from gps readings.



Date of Photography: 11:00am, 12 March 2013

SOUTH TARANAKI OFFSHORE SAND MINING PROJECT Site 15: Manawapou

Figure 5.21

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vpoint Details	WGS 1984 lat Elevation Distance to Horizon	:	E174°21'7.73" <i>S39°39'28.48"</i> 48m 27 km 2:28pm, 12 March 2013
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Data source: NIWA SSC Field measurements 2013

Horizontal Field of View (Main Image): 54.4° Camera: Nikon D800 Lens: 35mm f/2.0 Location data, including elevation derived from gps readings.



Date of Photography: 2:28pm, 12 March 2013

SOUTH TARANAKI OFFSHORE SAND MINING PROJECT Site 15: Manawapou

Figure 5.22

Instrument Site 16	1	m Offshore	
Instrument reading 12:45 7 March 2013	SSC 2	20.4 mg/l	
24 hour median 7 March 2013	9.5 mg/l	Min Max 5.4 mg/l 21.4 mg/l	
Survey Period Median 27 Feb - 2 May 2013	16.1 mg/l	5.4 mg/l 21.4 mg/l Min Max 2.4 mg/l 82.7 mg/l	



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nt Detai	WGS 1984 lat Elevation Distance to Horizon	:	E174°13'29.73" <i>S39°35'26.31"</i> 276m 64 km 12:46pm, 7 March 2013
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Data source: NIWA SSC Field measurements 2013

Horizontal Field of View (Main Image): 54.4° Camera: Nikon D800 Lens: 35mm f/2.0 Location data, including elevation derived from gps readings. Date of Photography: 12:46pm, 7 March 2013



SOUTH TARANAKI OFFSHORE SAND MINING PROJECT Site 16: Ohawe

Figure 5.23

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Instrument Site 16	508	m Offshore				
Instrument reading		20.4 mg/l				
10:45 12 March 2013		20.4 mg/1				
24 hour median	24.9 mg/l	Min	Max			
12 March 2013	24.9 118/1	11.5 mg/l	52.4 mg/l	+1		
Survey Period Median	16.1 mg/l	Min	Max			
27 Feb - 2 May 2013						
27 FED - 2 May 2013	10.1 116/1	2.4 mg/l	82.7 mg/l			



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point Details	WGS 1984 lon WGS 1984 lat Elevation Distance to Horizon Date of Photography	:	E174°13'14.19" <i>S39°35'28.99"</i> 236m 59 km 10:49am, 12 March 2013
7			

Data source: NIWA SSC Field measurements 2013

Horizontal Field of View (Main Image): 54.4° Camera: Nikon D800 Lens: 35mm f/2.0 Location data, including elevation derived from gps readings.



Date of Photography: 10:49am, 12 March 2013

SOUTH TARANAKI OFFSHORE SAND MINING PROJECT Site 16: Ohawe

Figure 5.24

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24 hour median 12 March 2013	24.9 mg/l	Min 11.5 mg/l	Max 52.4 mg/l	E					
Survey Period Median 27 Feb - 2 May 2013	16.1 mg/l	Min 2.4 mg/l	Max 82.7 mg/l						
27 Feb - 2 May 2013		2.+111g/1	02.7 118/1		and the second			f to the	A STATE OF THE

Estimated Instrument Site



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it Detai	<i>NGS 1984 lat</i> <i>Elevation</i> Distance to Horizon	:	E174°11'39.47" 539°34 <i>'28.99"</i> 226m 58km 10:49am, 12 March 2013
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Data source: NIWA SSC Field measurements 2013

Horizontal Field of View (Main Image): 54.4° Camera: Nikon D800 Lens: 35mm f/2.0 Location data, including elevation derived from gps readings.



Date of Photography: 10:49am, 12 March 2013

SOUTH TARANAKI OFFSHORE SAND MINING PROJECT Site 16: Ohawe

Figure 5.25

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Instrument Site 16	508 m Offshore				
Instrument reading	SSC 19.7 mg/l				
11:00 12 March 2013	SSC 19.7 mg/l				
11:00 12 March 2013 24 hour median	24.9 mg/l ^{Min} ^{Max}				
11:00 12 March 2013					



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Details

Data source: NIWA SSC Field measurements 2013

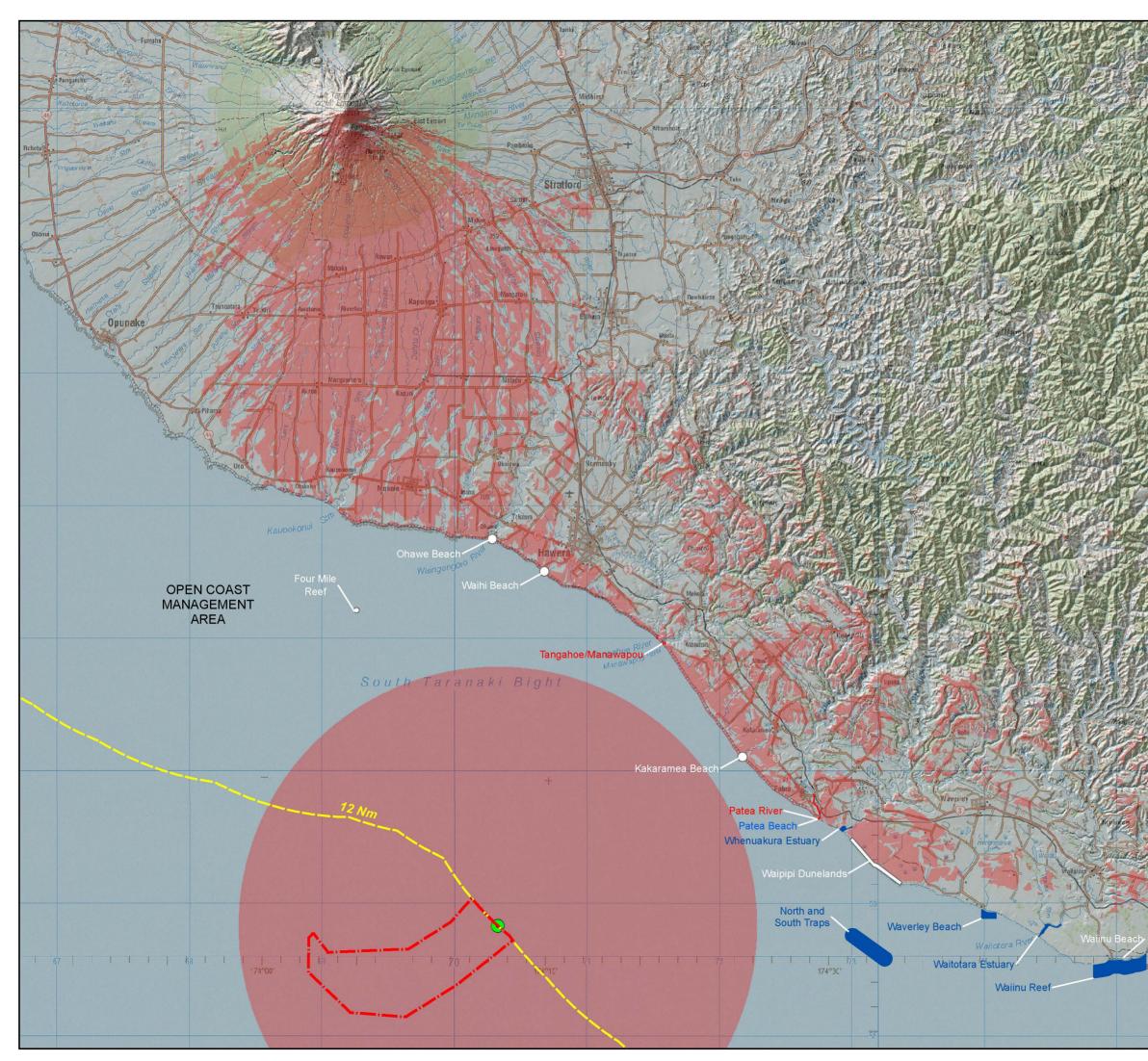
Horizontal Field of View (Main Image): 54.4° Camera: Nikon D800 Lens: 35mm f/2.0 Location data, including elevation derived from gps readings.



Date of Photography: 10:54am, 12 March 2013

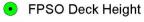
SOUTH TARANAKI OFFSHORE SAND MINING PROJECT Site 16: Ohawe

Figure 5.26













Note : This analysis is based on terrain only - no vegetation or structures are used in the analysis. The effects of curvature and

Projection: NZGD 2000 New Zealand Transverse Mercator

SOUTH TARANAKI OFFSHORE IRON SANDS MINING PROJECT

ZONE OF THEORETICAL VISIBILITY

FROM 12 NAUTICAL MILES FPSO Deck Height : 15m asl Observer Height : 2m agl

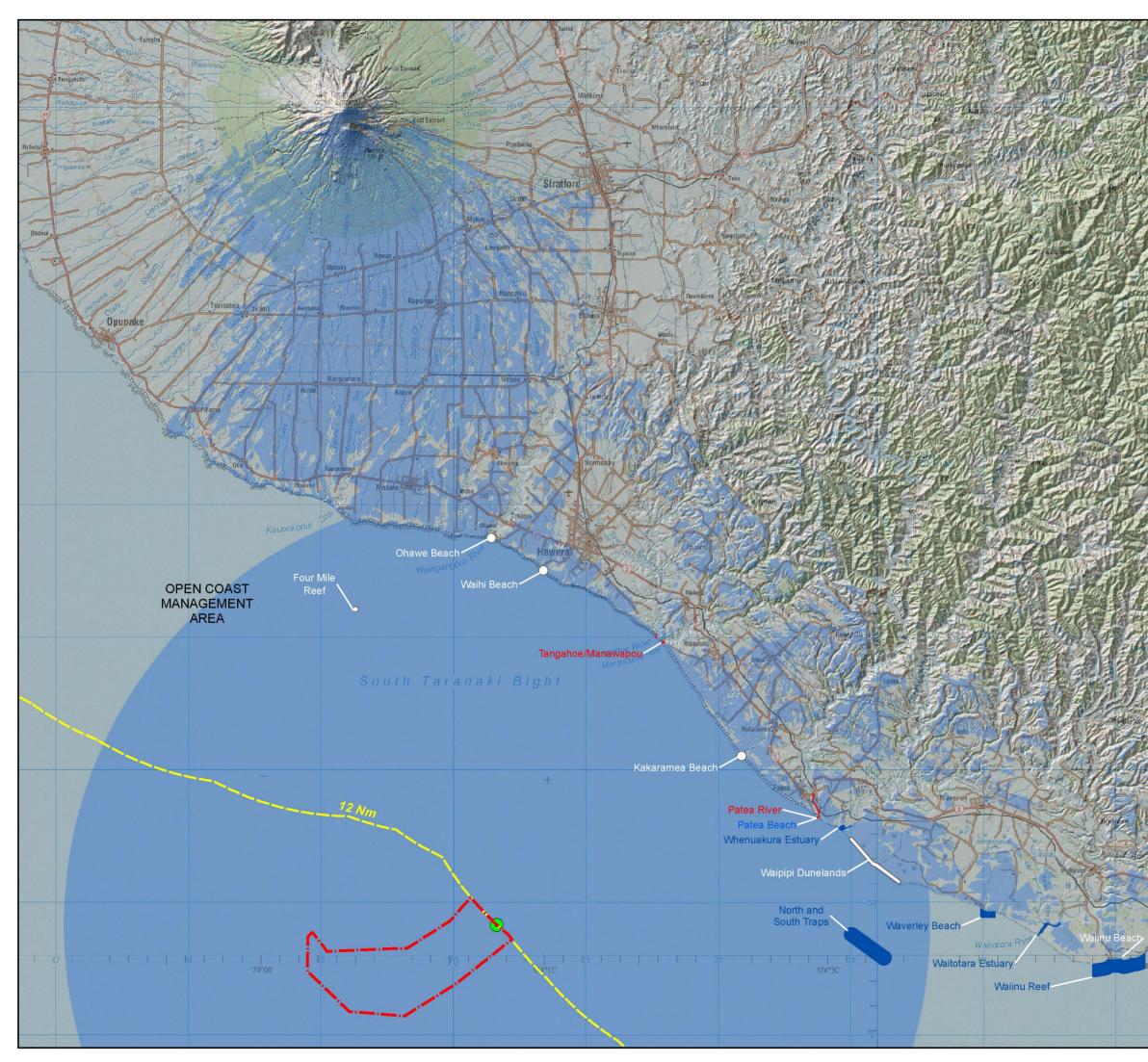
Date: 19 August 2013 Revision: 0

Author: Frank Boffa Checked: XX

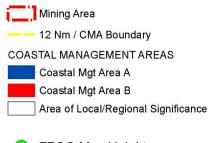
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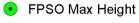


FIGURE 7.1













Note : This analysis is based on terrain only - no vegetation or structures are used in the analysis. The effects of curvature and

Projection: NZGD 2000 New Zealand Transverse Mercator

SOUTH TARANAKI OFFSHORE IRON SANDS MINING PROJECT

ZONE OF THEORETICAL VISIBILITY

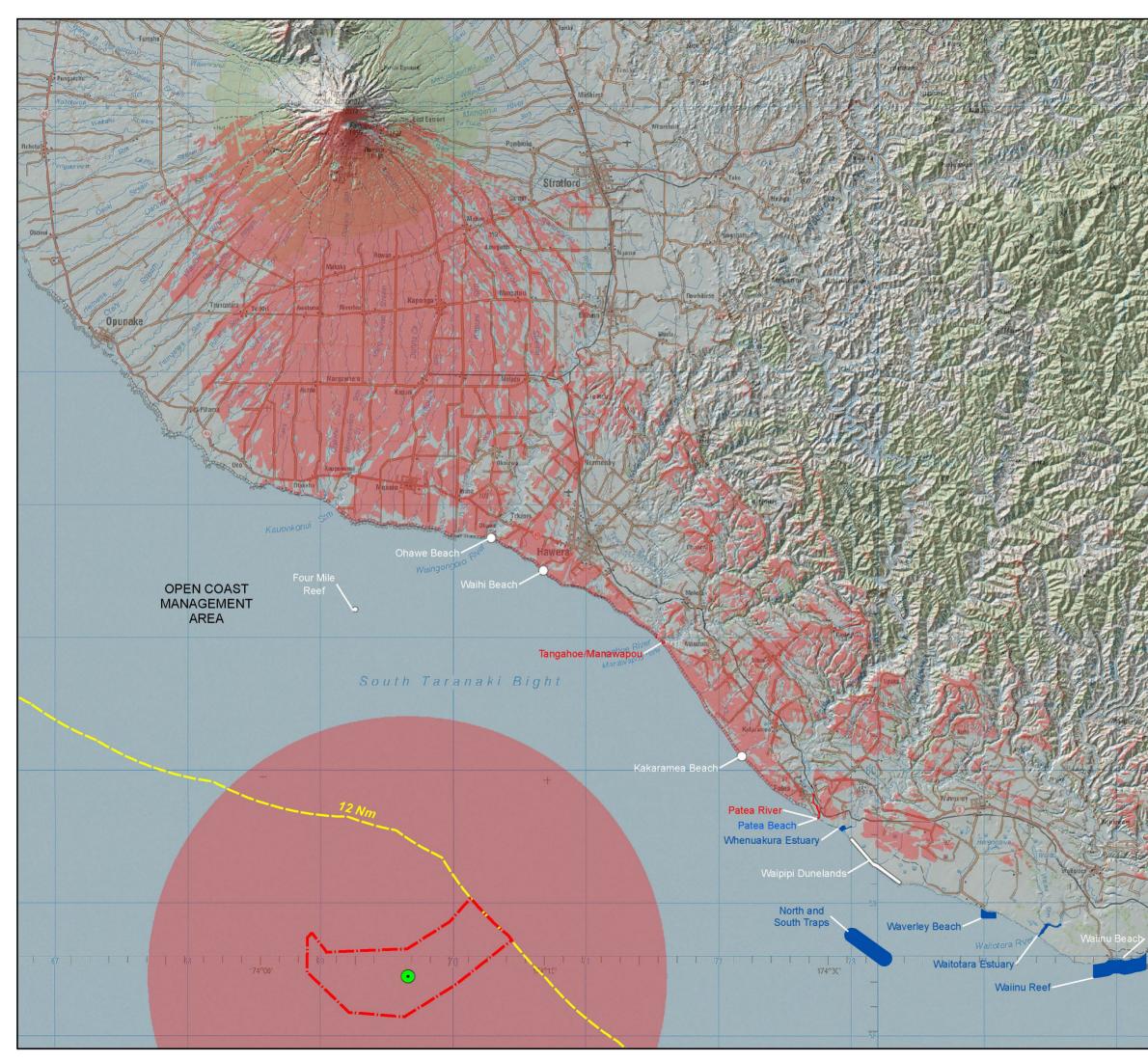
FROM 12 NAUTICAL MILES FPSO Max Height : 55m asl Observer Height : 2m agl

Date: 19 August 2013 Revision: 0

Author: Frank Boffa Checked: XX

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Note : This analysis is based on terrain only - no vegetation or structures are used in the analysis. The effects of curvature and

Projection: NZGD 2000 New Zealand Transverse Mercator

SOUTH TARANAKI OFFSHORE IRON SANDS MINING PROJECT

ZONE OF THEORETICAL VISIBILITY

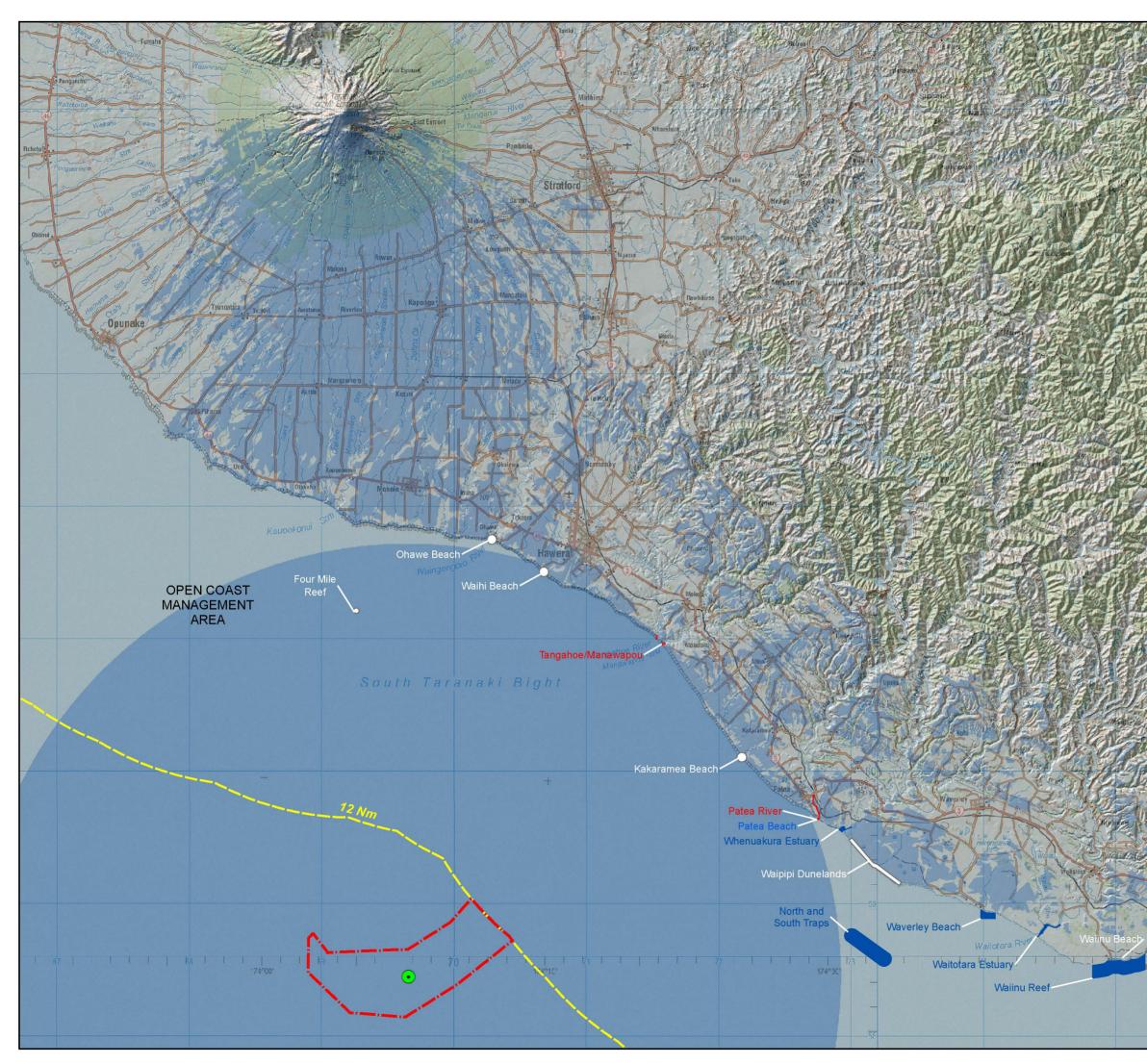
FROM CENTRE OF LICENCE FPSO Deck Height : 15m asl Observer Height : 2m agl

Date: 19 August 2013 Revision: 0

Author: Frank Boffa Checked: XX

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Note : This analysis is based on terrain only - no vegetation or structures are used in the analysis. The effects of curvature and

Projection: NZGD 2000 New Zealand Transverse Mercator

SOUTH TARANAKI OFFSHORE IRON SANDS MINING PROJECT

ZONE OF THEORETICAL VISIBILITY

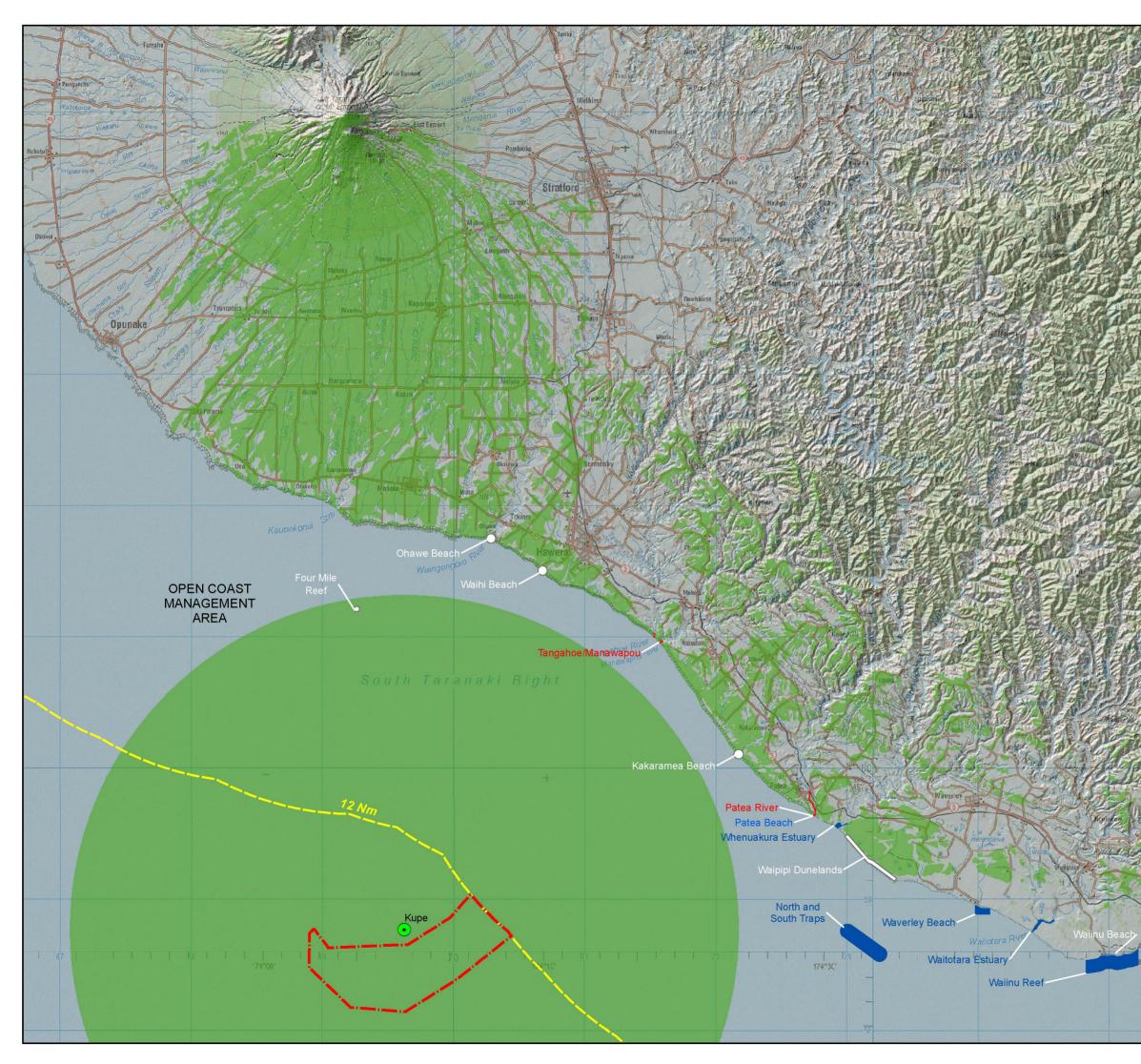
FROM CENTRE OF LICENCE FPSO Max Height : 55m asl Observer Height : 2m agl

Date: 20 August 2013 Revision: 0

Author: Frank Boffa Checked: XX

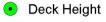
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Visible



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Note : This analysis is based on terrain only - no vegetation or structures are used in the analysis. The effects of curvature and

Projection: NZGD 2000 New Zealand Transverse Mercator

SOUTH TARANAKI OFFSHORE IRON SANDS MINING PROJECT

ZONE OF THEORETICAL VISIBILITY

FROM KUPE PLATFORM Deck Height : 30m asl Observer Height : 2m agl

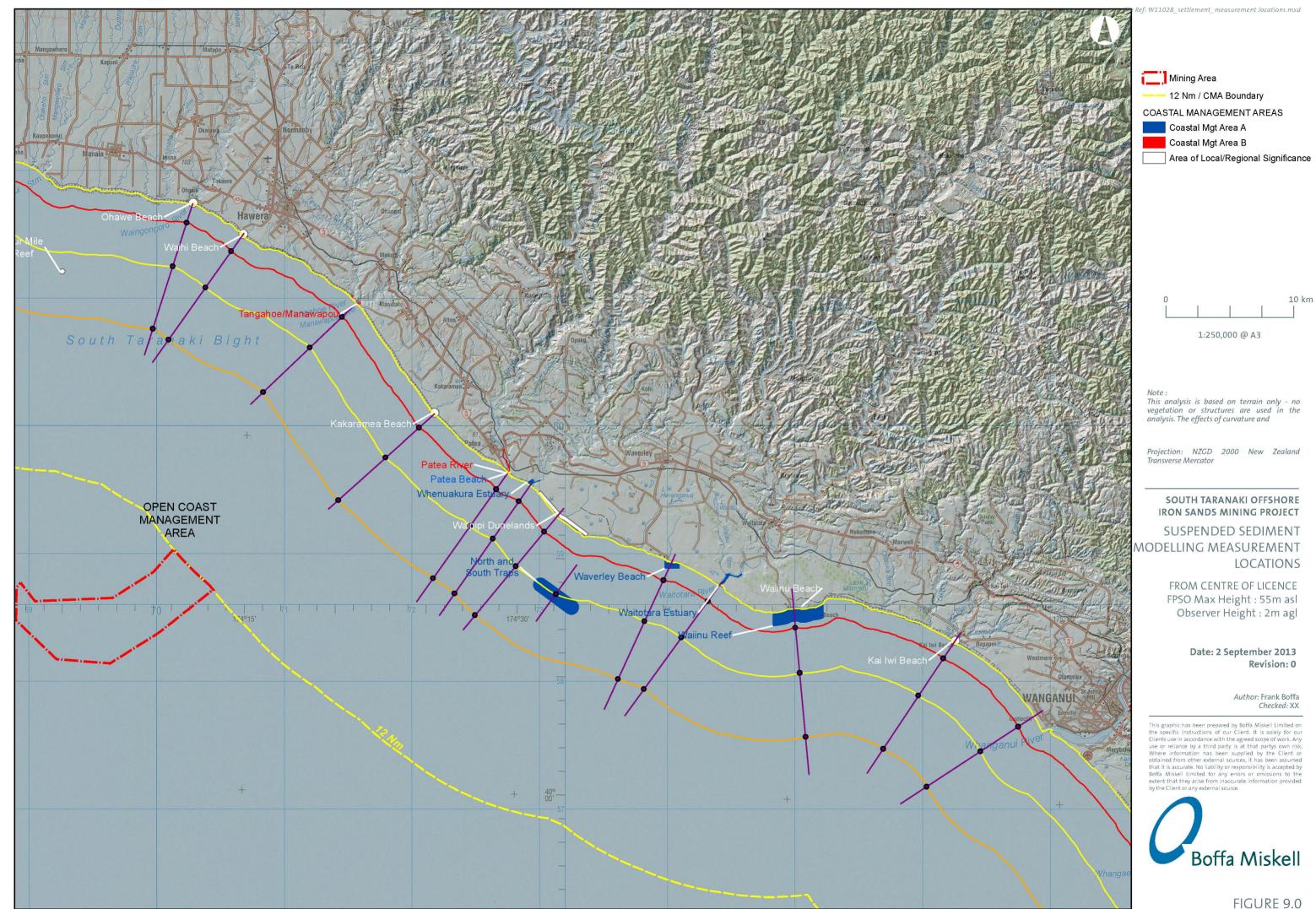
Date: 19 August 2013 Revision: 0

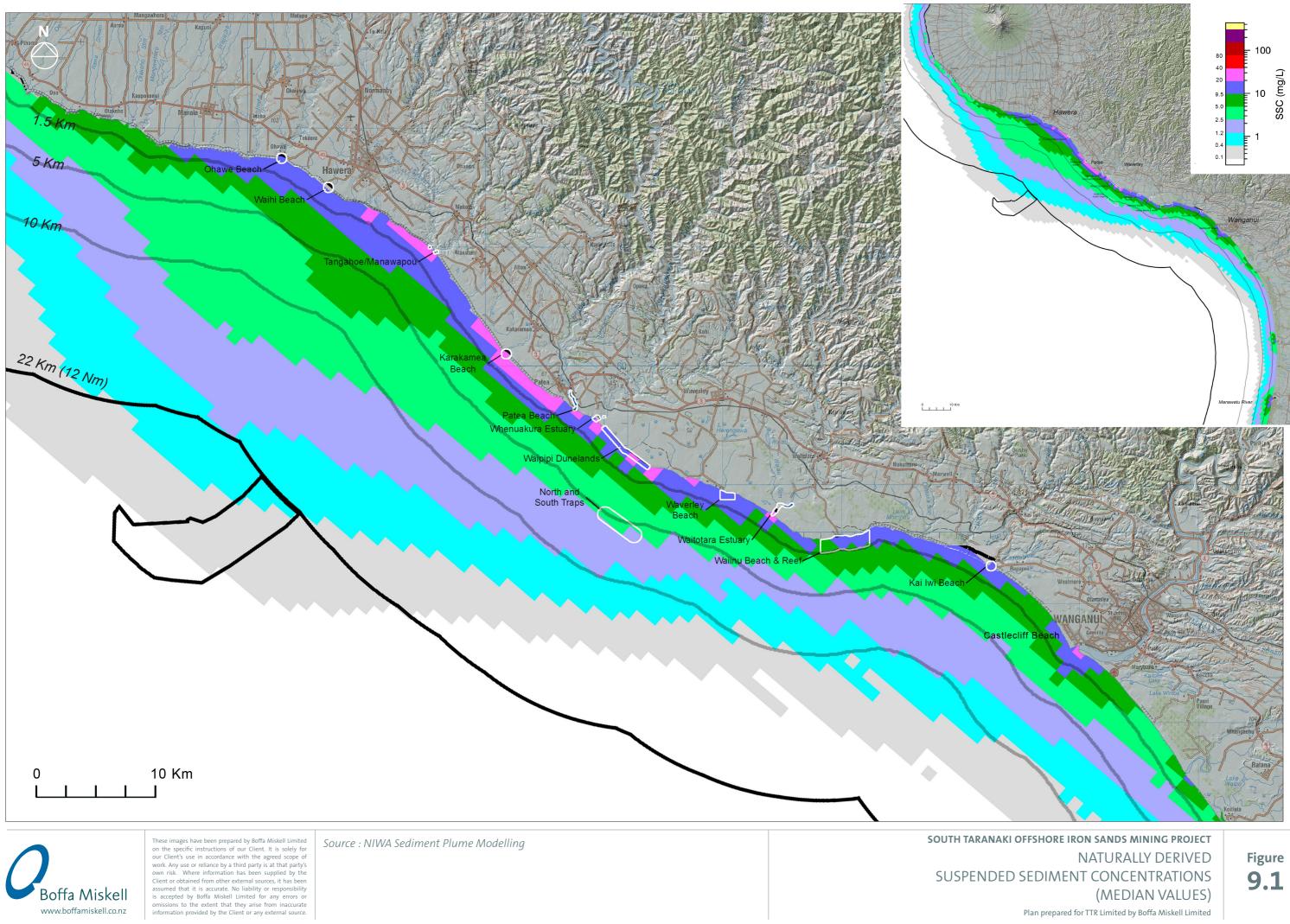
Author: Frank Boffa Checked: XX

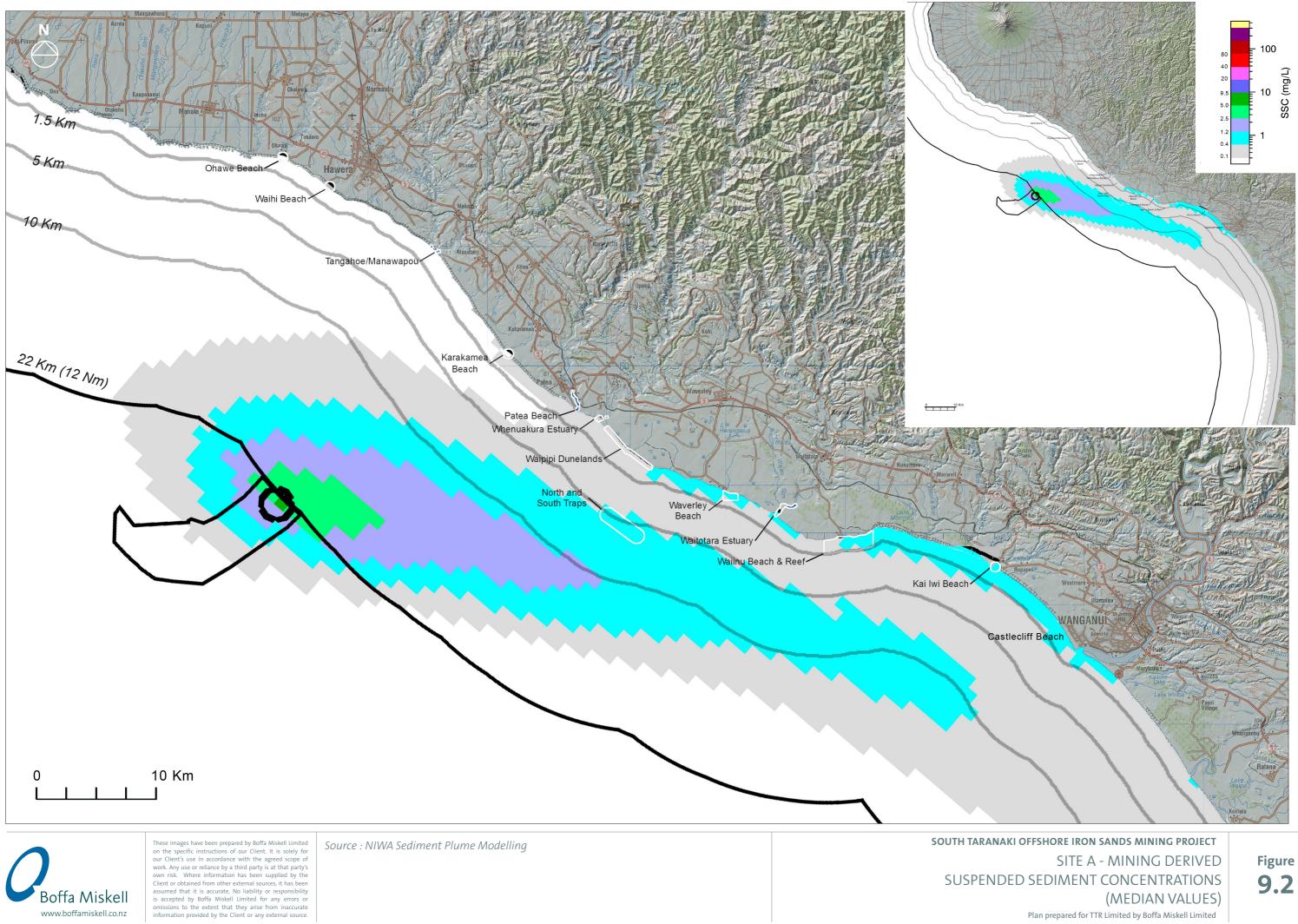
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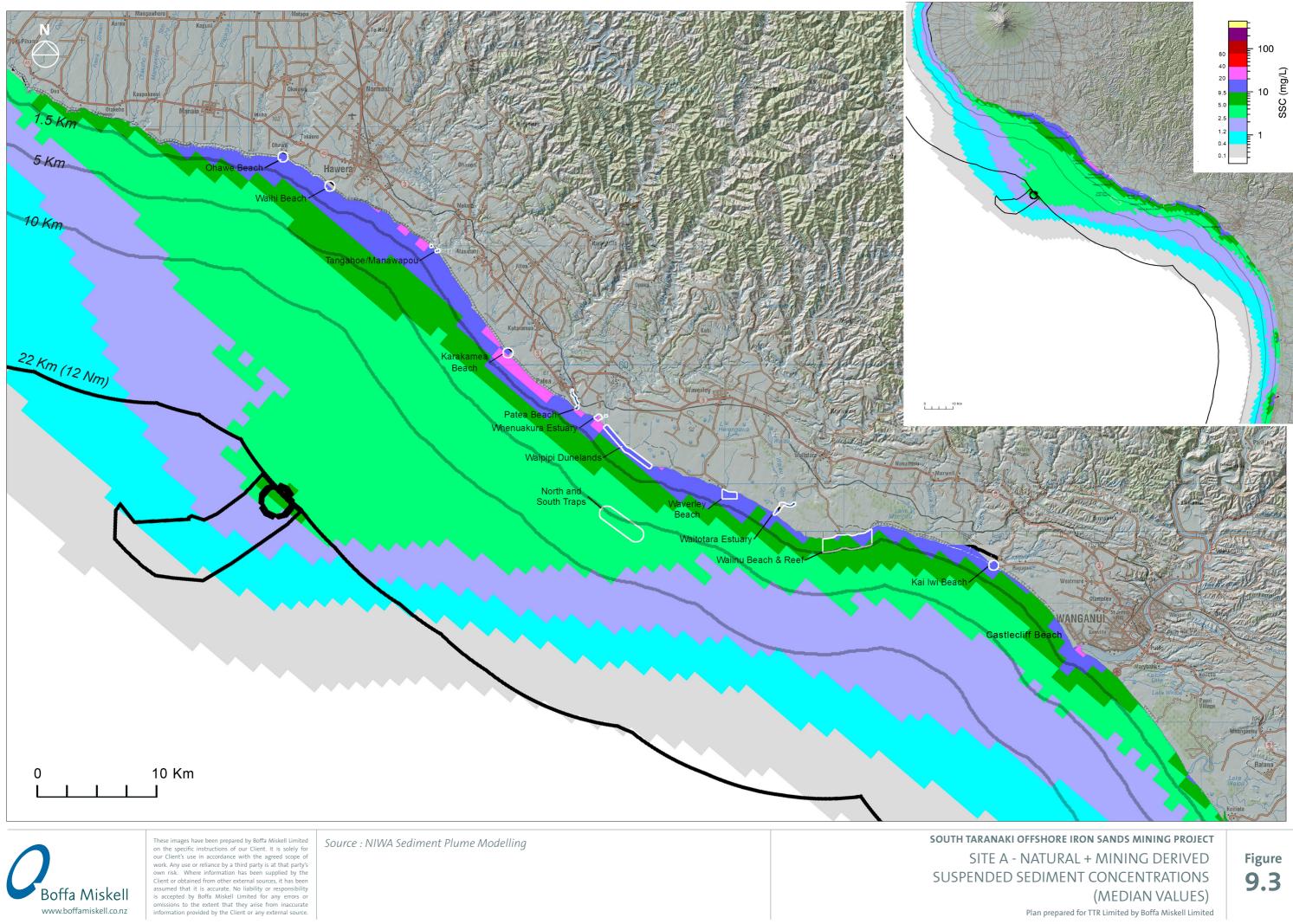


FIGURE 7.5









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(MEDIAN VALUES)