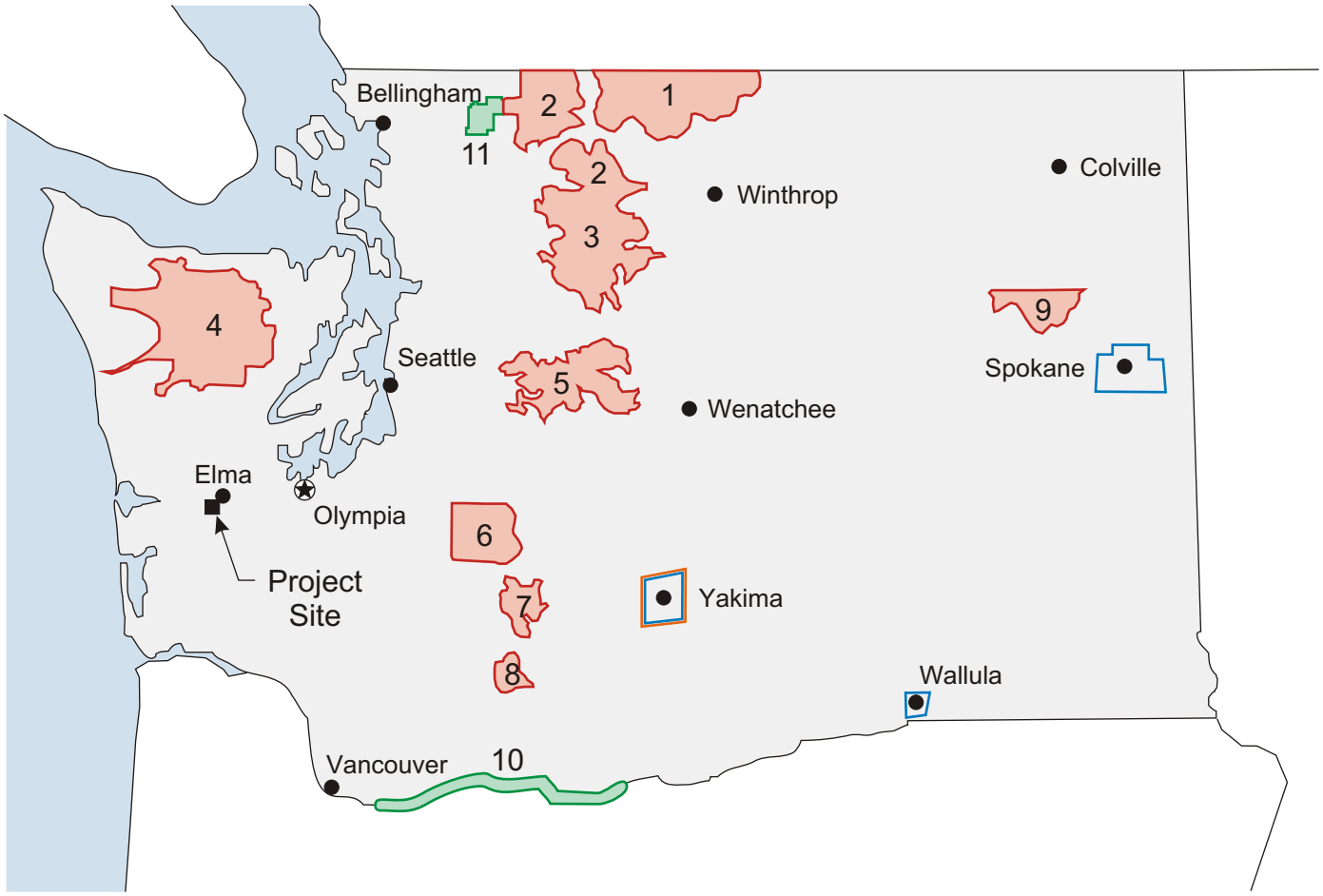


LEGEND

PSD Class I Areas:

1 Pasayten Wilderness
2 North Cascades National Park
3 Glacier Peak Wilderness
4 Olympic National Park
5 Alpine Lakes Wilderness
6 Mount Rainier National Park
7 Goat Rocks Wilderness
8 Mount Adams Wilderness
9 Spokane Indian Reservation

Special Significance Areas:

10 Columbia River Gorge National Scenic Area
11 Mount Baker Wilderness

Nonattainment Areas:

Carbon Monoxide Areas (CO)
Particulate Matter Areas (PM_{10})

Figure 6.1-1

Nonattainment, Prevention of Significant Deterioration (PSD) Class I, and Special Significance Areas for Washington State

URS

Phase II Expansion
Satsop CT Project

46866002.01_51.cdr

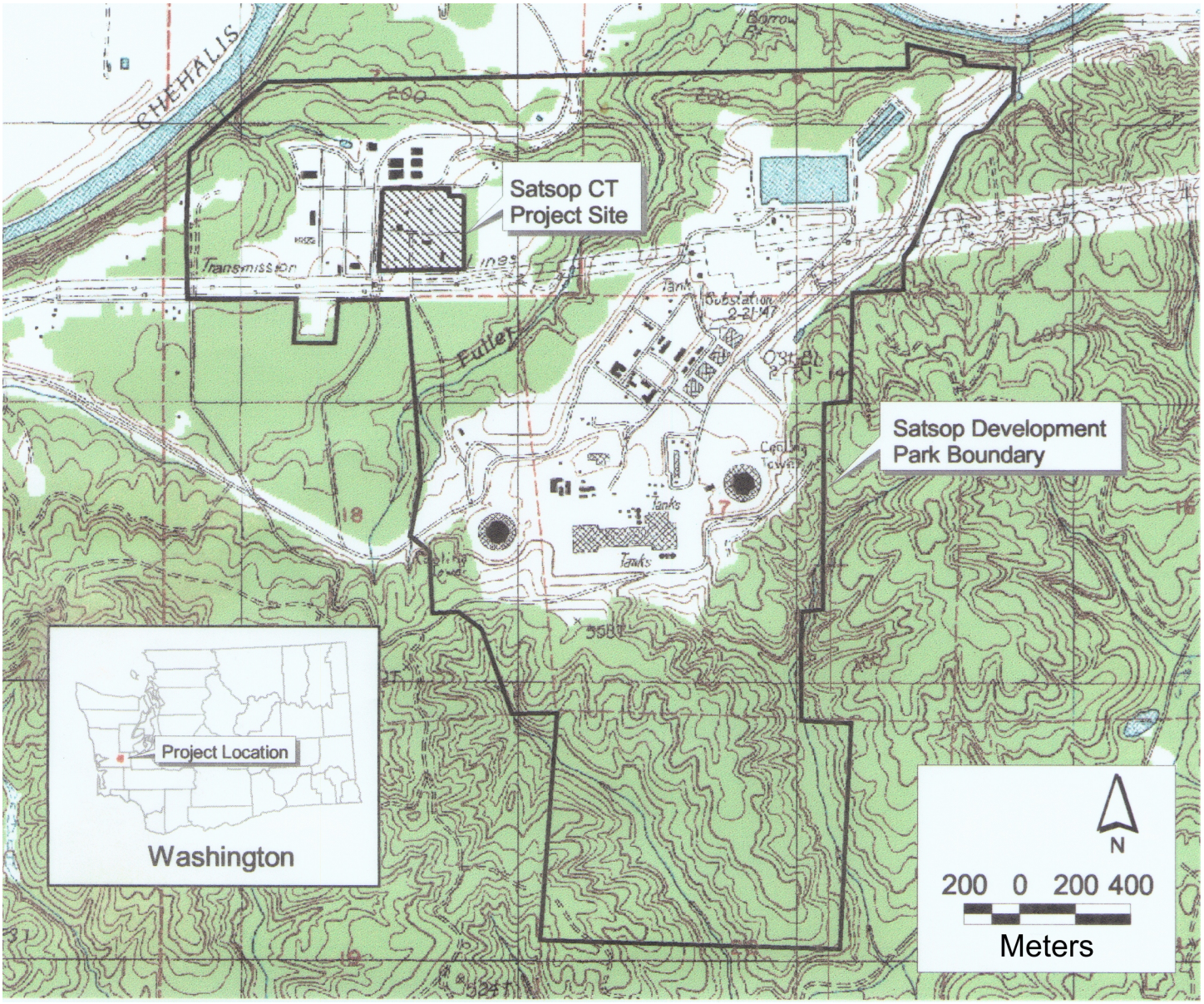
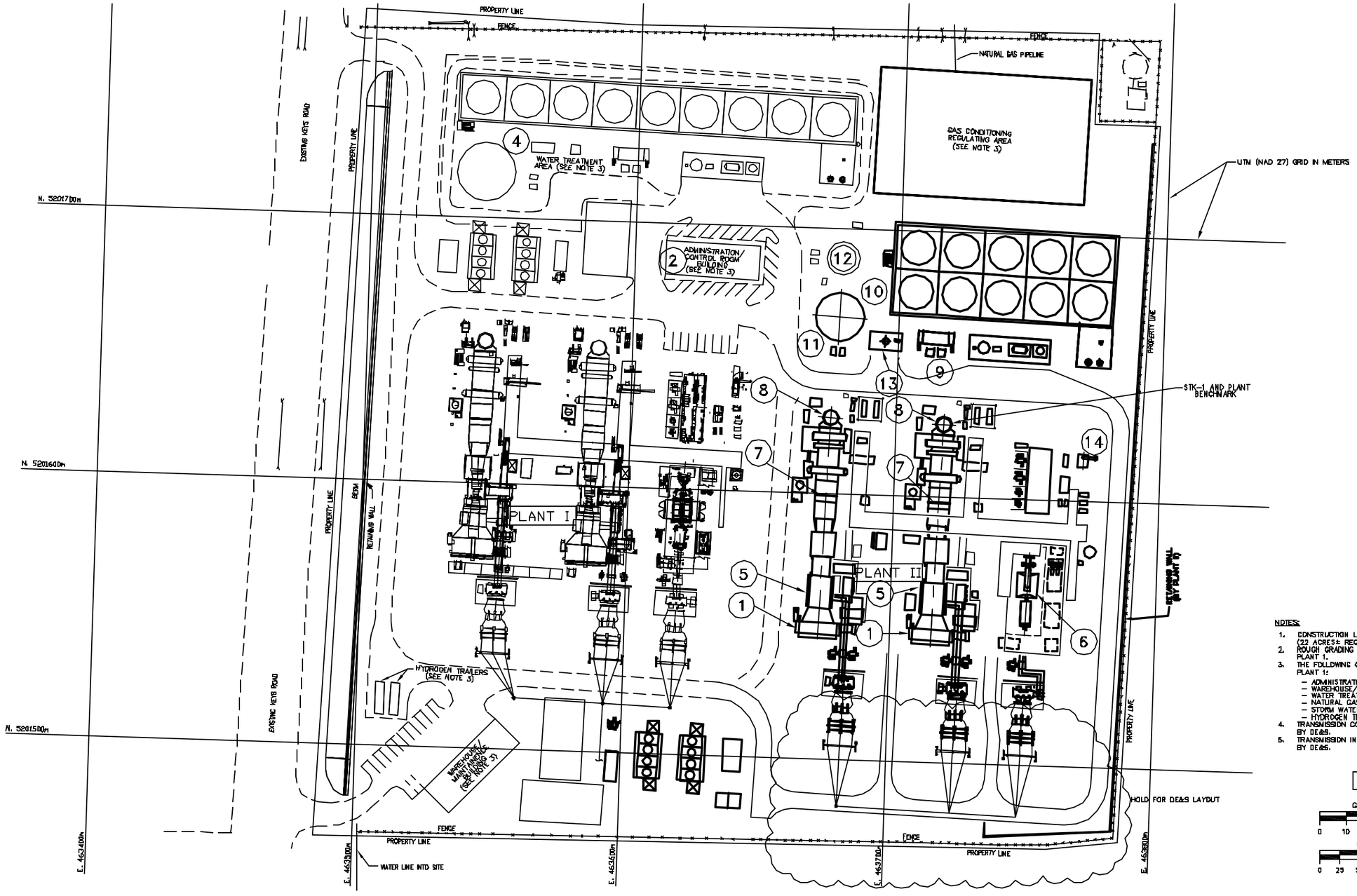


Figure 6.1-2

Project Location

URS

Phase II Expansion
Satsop CT Project



KEY

1. GAS TURBINE HOUSING
2. ADMINISTRATION BUILDING
3. WORKSHOP AND STORES
4. WATER TREATMENT AREA
5. COMBUSTION TURBINE
6. STEAM TURBINE
7. HRSG
8. HRSG STACK
9. CIRCULATING WATER PUMPS
10. COOLING TOWER
11. RAW WATER TANK
12. DEMINERALIZED WATER TANK
13. AMMONIA TANKS
14. AUXILIARY BOILER STACK

NOTES:

1. CONSTRUCTION LAYDOWN AND PARKING TO BE OFFSITE. (22 ACRES± REQUIRED)
2. ROUGH GRADING AND DRAINAGE IS EXISTING FROM PLANT PLANT 1.
3. THE FOLLOWING COMMON FACILITIES ARE LOCATED IN PLANT 1:
   - ADMINISTRATION/CONTROL ROOM BUILDING
   - WAREHOUSE/MAINTENANCE BUILDING
   - WATER TREATMENT
   - NATURAL GAS METERING YARD
   - STORM WATER MANAGEMENT
   - HYDROGEN TRAILERS
4. TRANSMISSION CORRIDOR INFORMATION TO BE PROVIDED BY DE&S.
5. TRANSMISSION INTERCONNECT LAYOUT TO BE PROVIDED BY DE&S.

PRELIMINARY

GRAPHIC SCALE IN METERS

0 10 20 40 60

GRAPHIC SCALE IN FEET

0 25 50 100 150 200

Last Printed: P:\ACAD\PROJECT\DukeEnergy\Satsop\R04\B8802201\005FIG4.dwg 11/28/01 at 15:53

Figure 6.1-3

Site Plan

URS

Phase II Expansion
Satsop CT Project

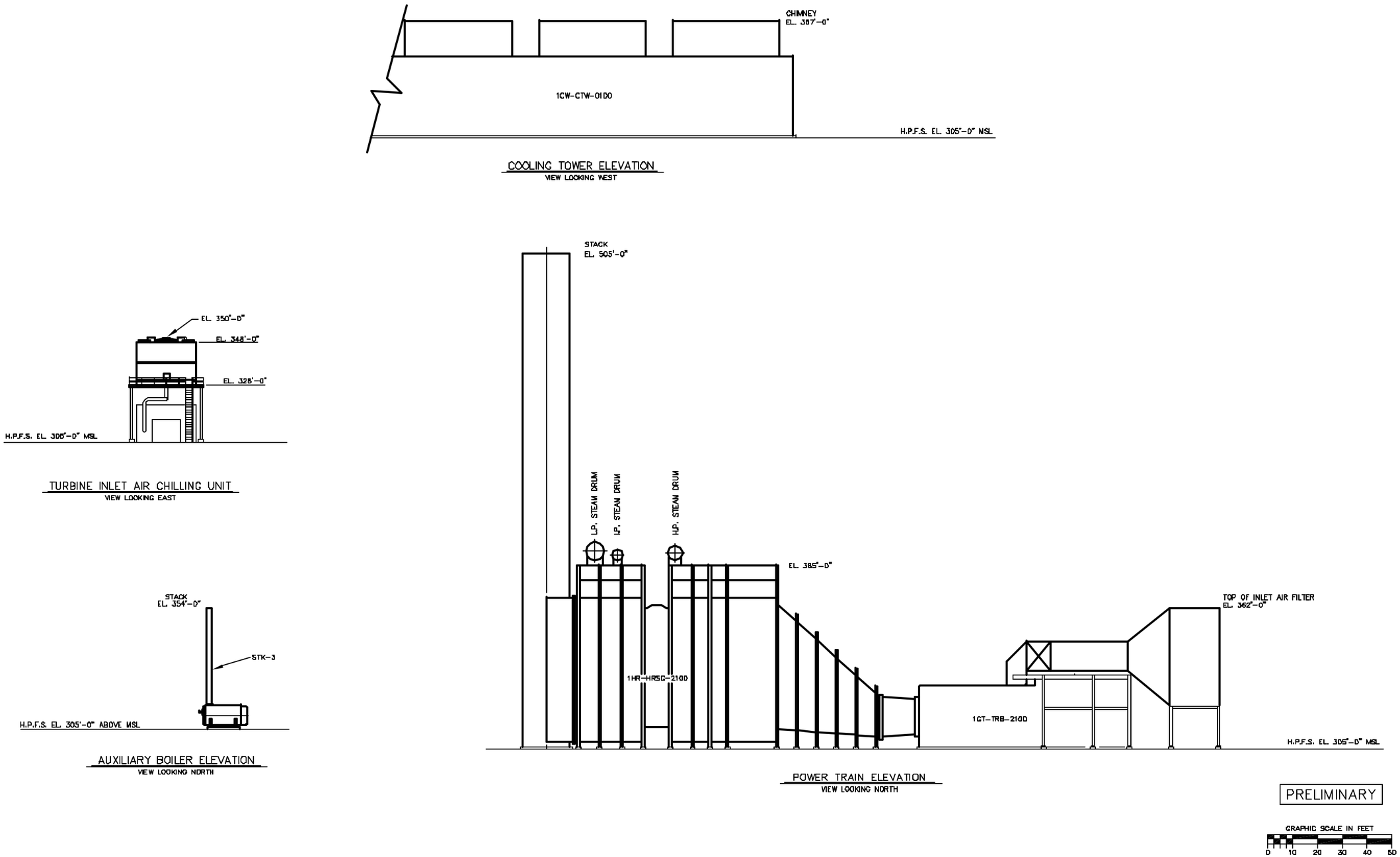


Figure 6.1-4
Plant Elevation

Phase II Expansion
Satsop CT Project

URS

46866002.01_08

Source: 3DScape

Figure 6.1-5

Proposed Phase II Conceptual Isometric View

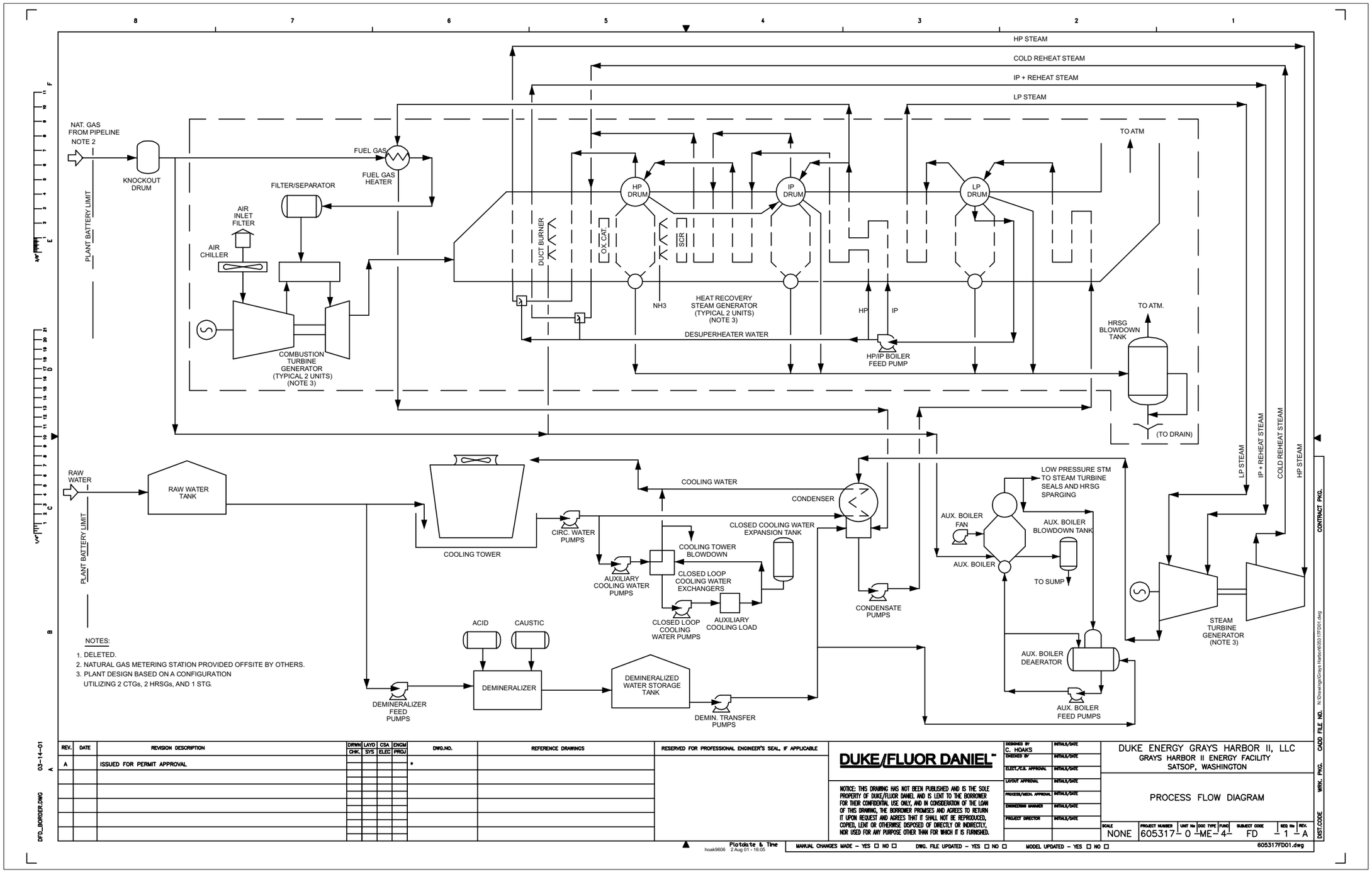


Figure 6.1-6

Process Flow Diagram

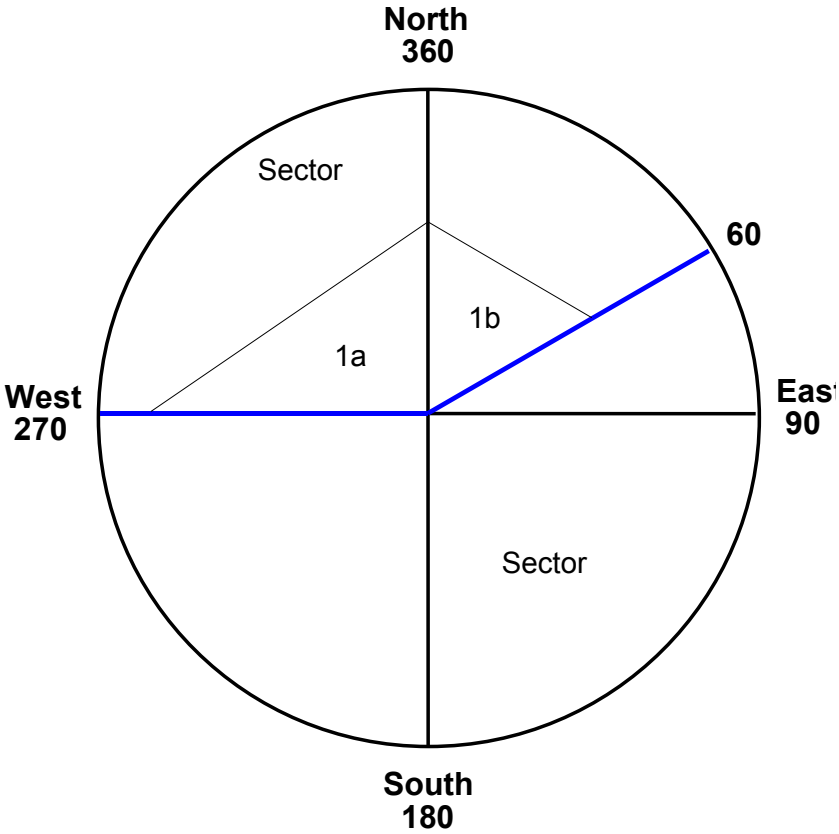


Figure 6.1-7

Land Use Sectors

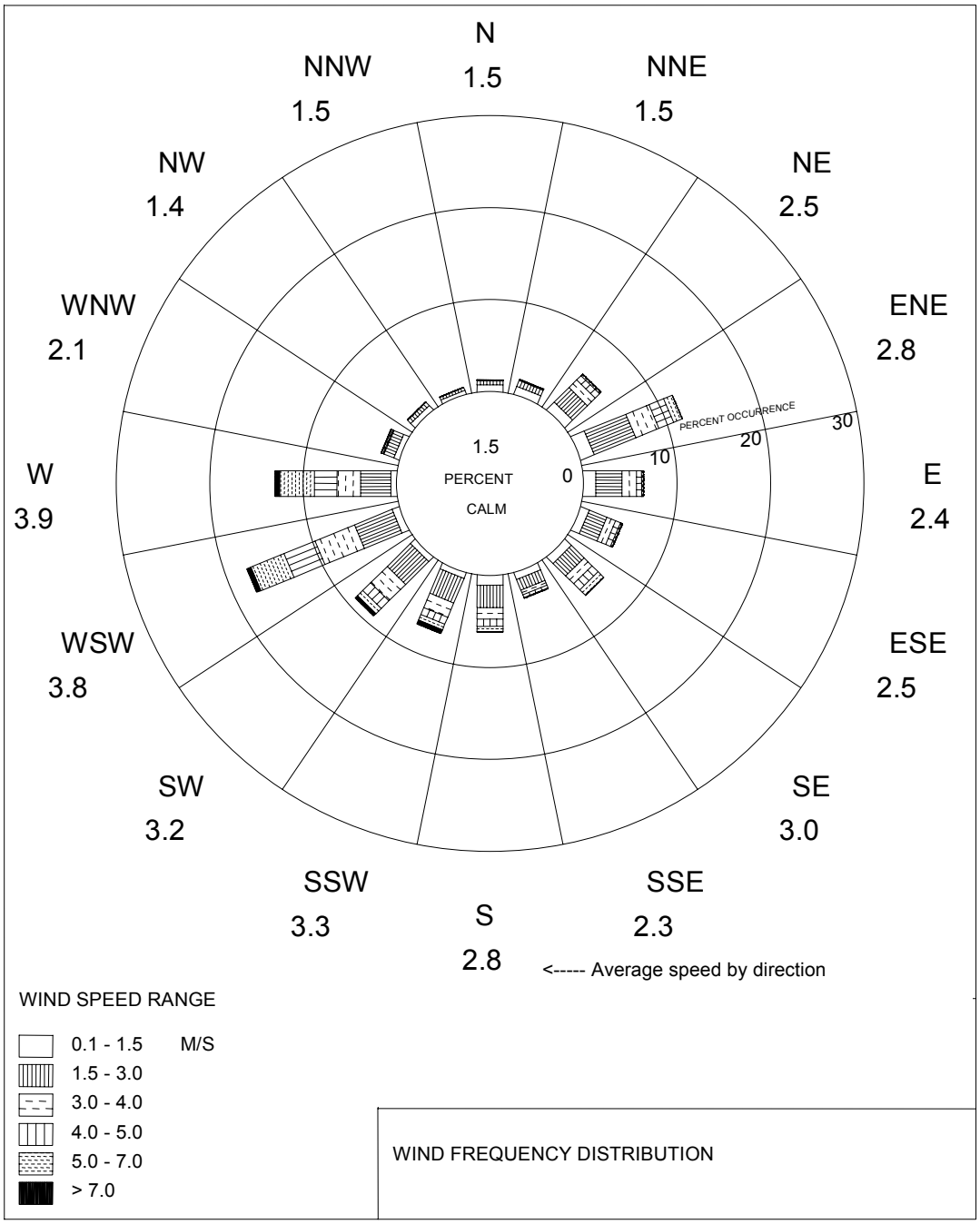


Figure 6.1-8

Satsop Site Surface Winds
10/1/79 to 9/30/80

URS

Phase II Expansion
Satsop CT Project

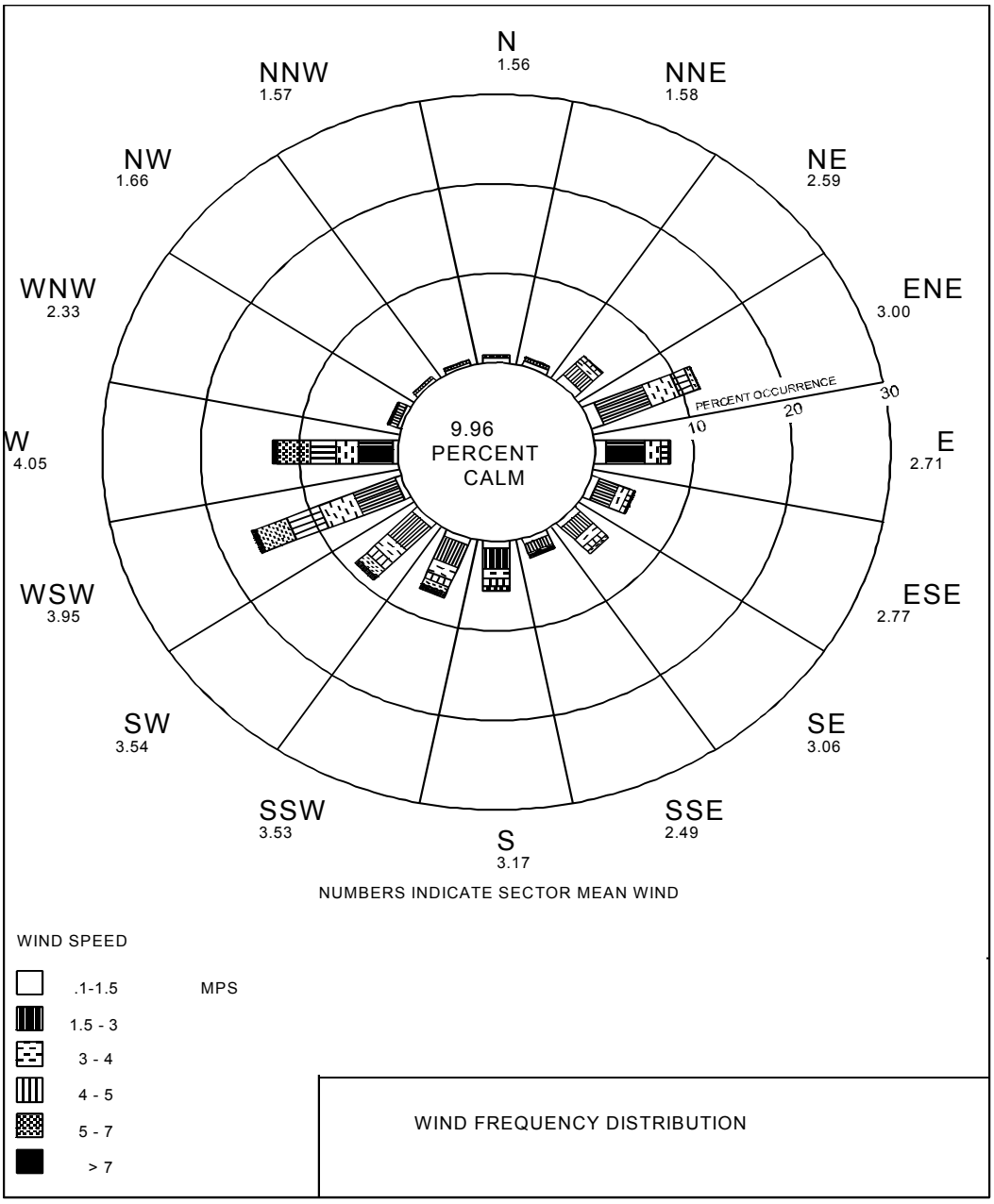


Figure 6.1-9

Satsop Site Surface Winds
2/1/80 to 1/31/81

46866002.01_53.cdr

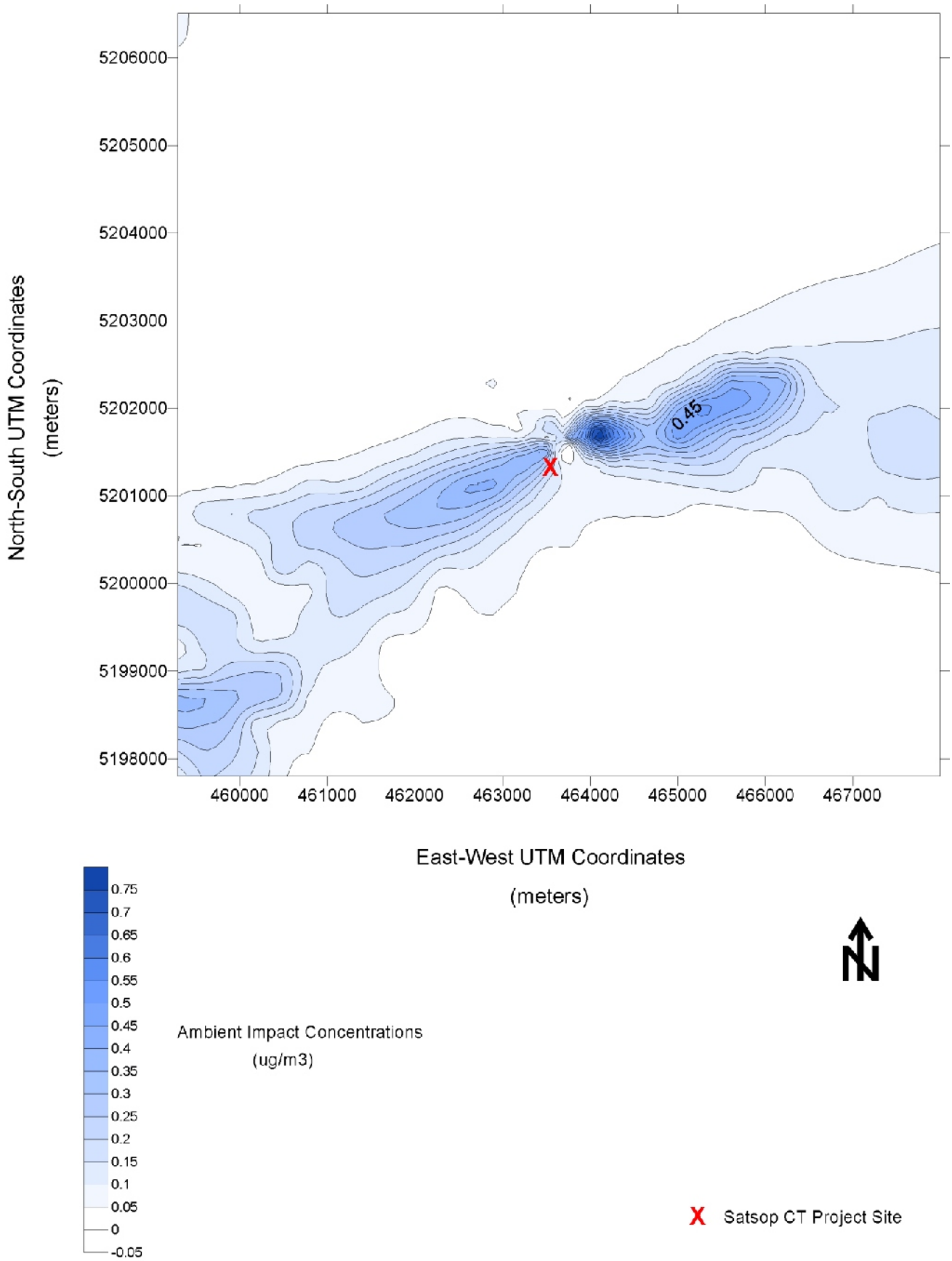


Figure 6.1-10

Annual PM Impact Concentrations

46866002.01_53.cdr

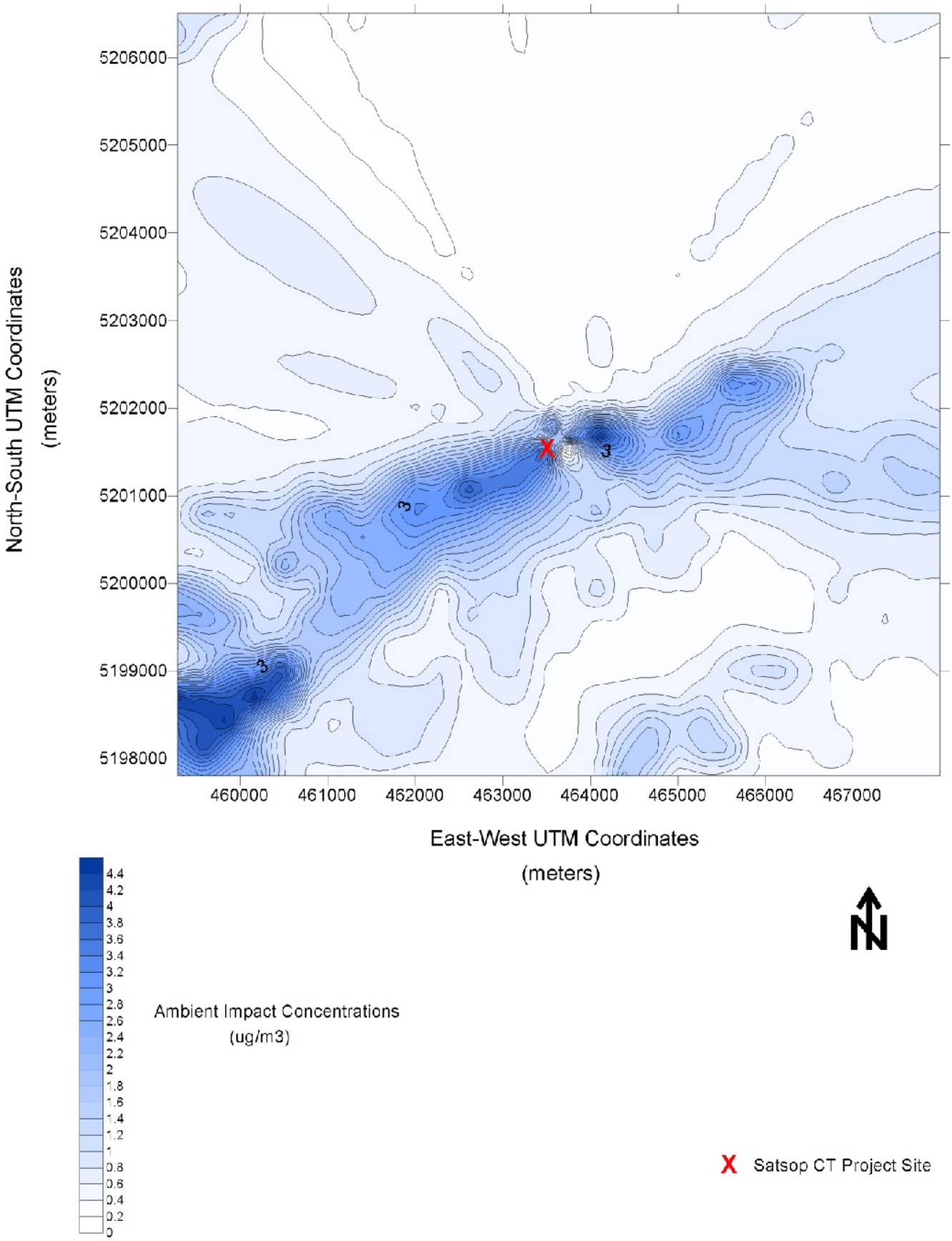


Figure 6.1-11

Twenty-Four Hour PM Impact Concentrations

46866002.01_53.cdr

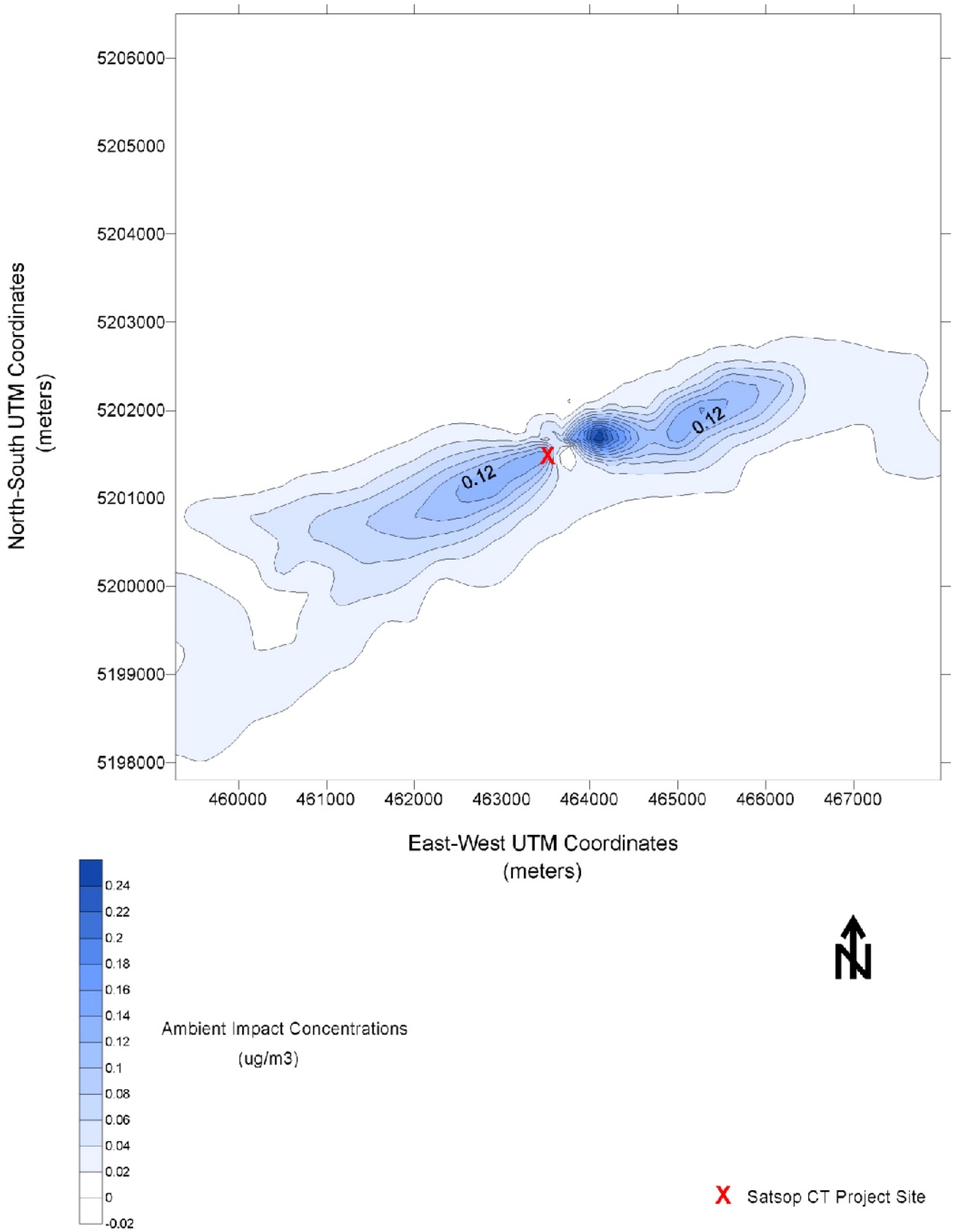


Figure 6.1-12

Annual SO_2 Impact Concentrations

46866002.01_53.cdr

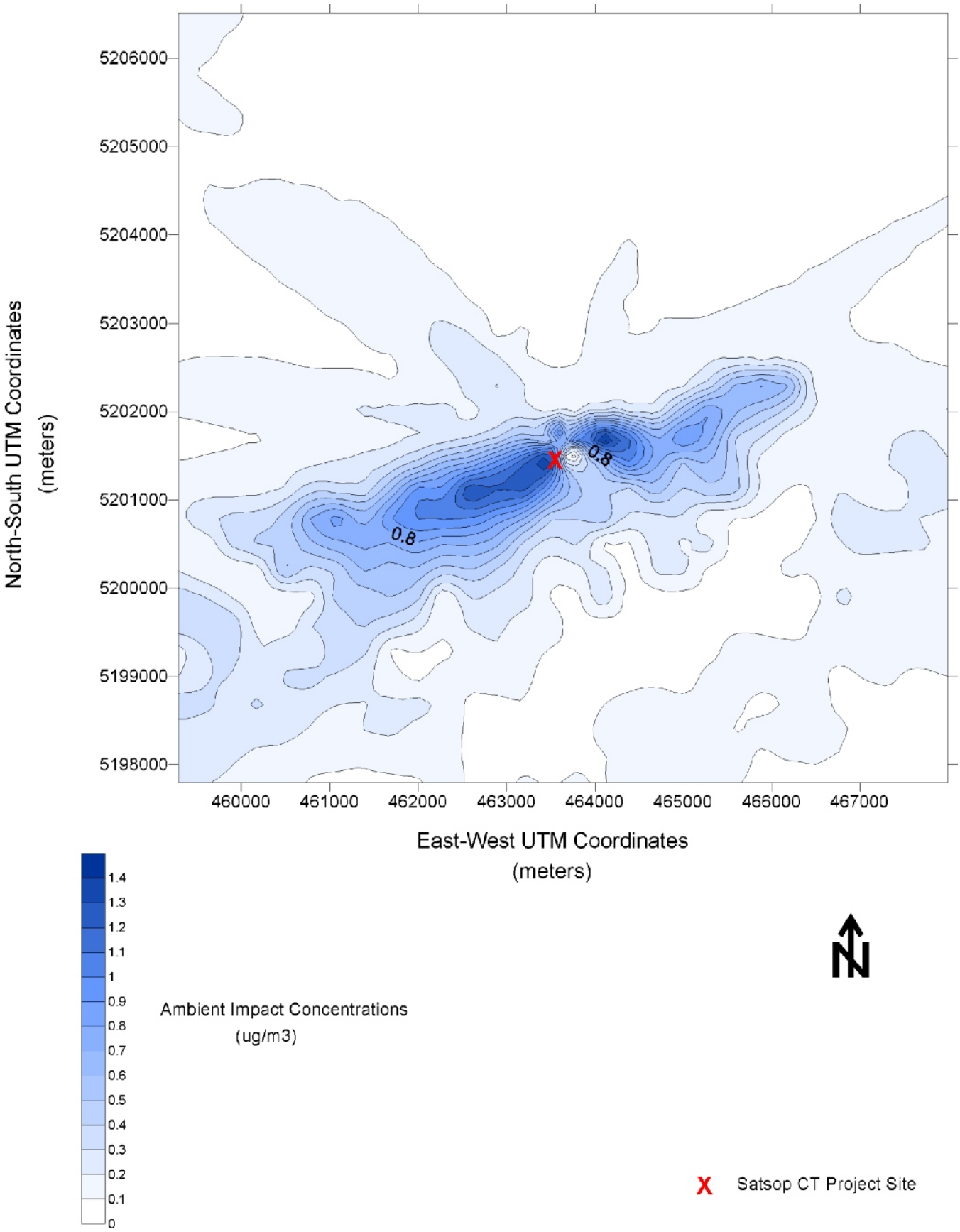


Figure 6.1-13

SO_2 24-Hour Impact Concentrations

46866002.01_53.cdr

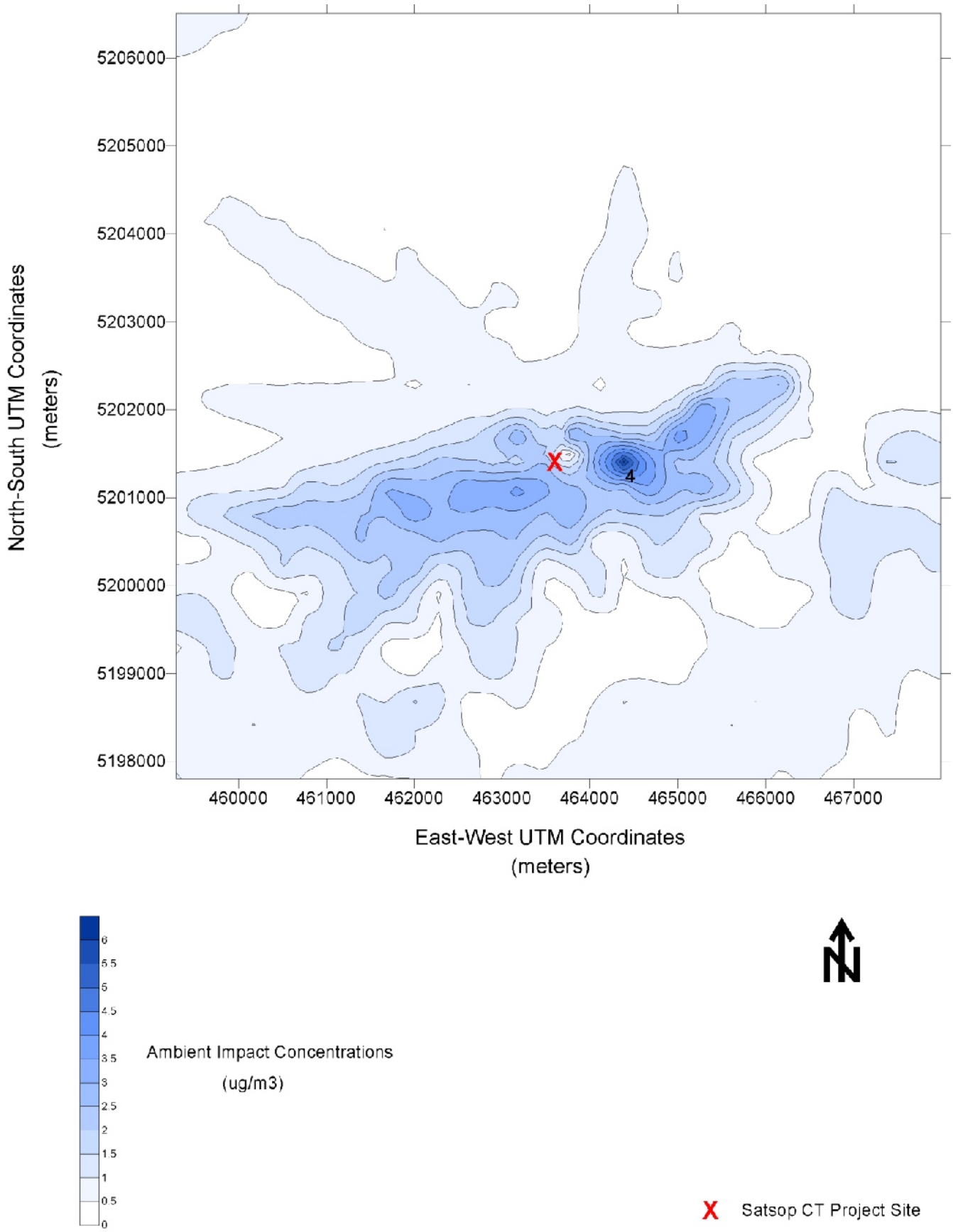


Figure 6.1-14

SO_2 3-Hour Impact Concentrations

46866002.01_53.cdr

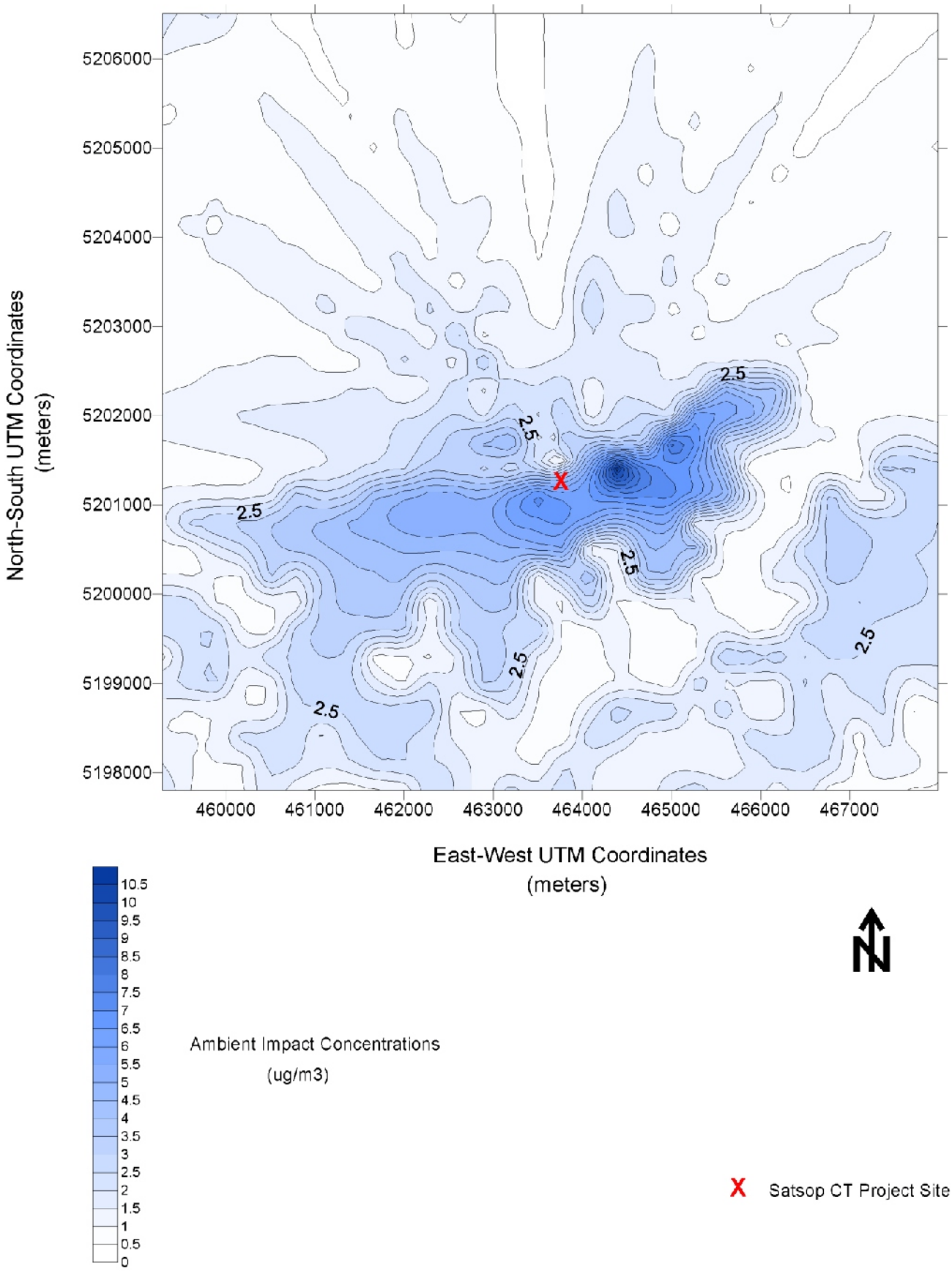


Figure 6.1-15

SO_2 1-Hour Impact Concentrations

46866002.01_53.cdr

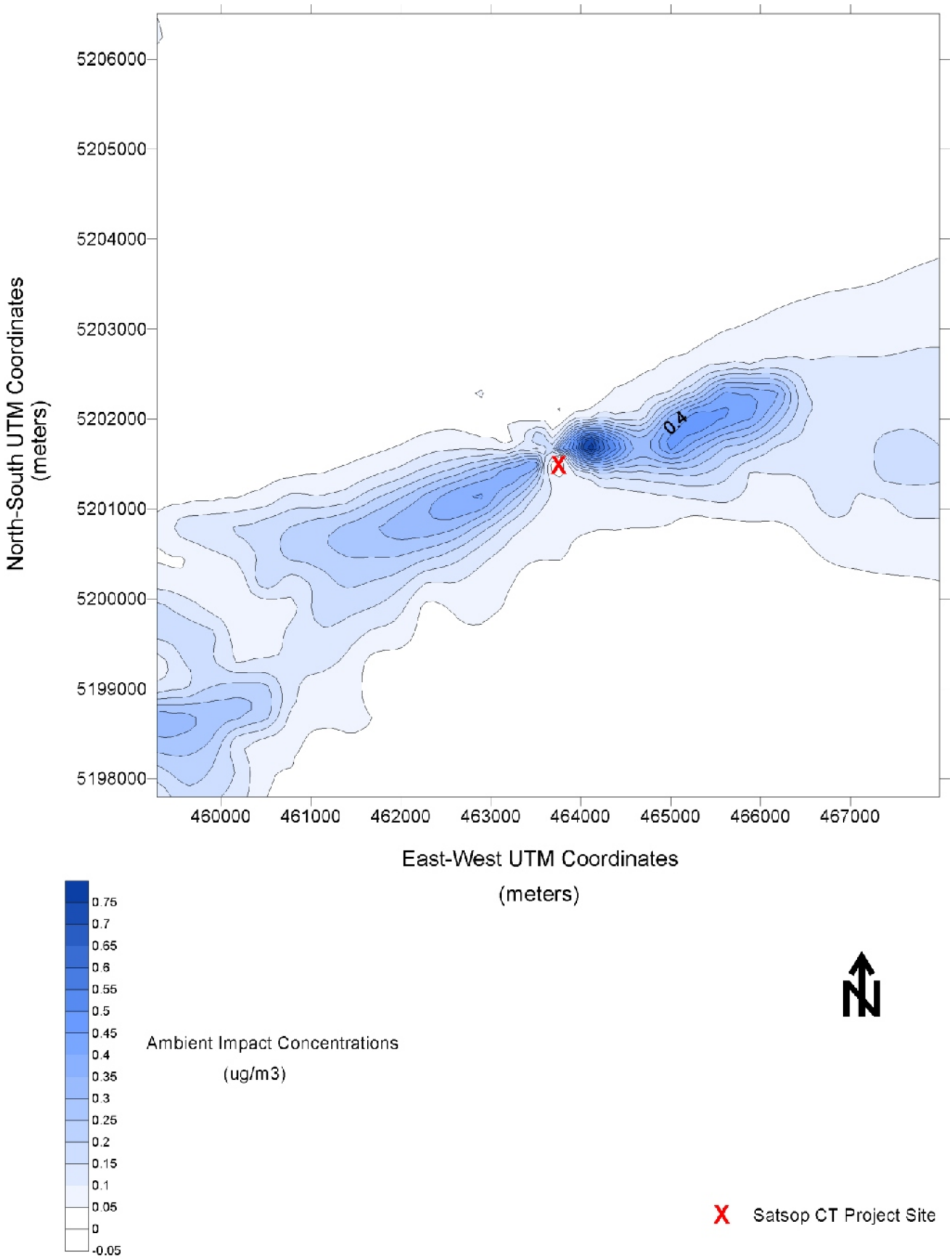


Figure 6.1-16

Annual NO_x Impact Concentrations

46866002.01_53.cdr

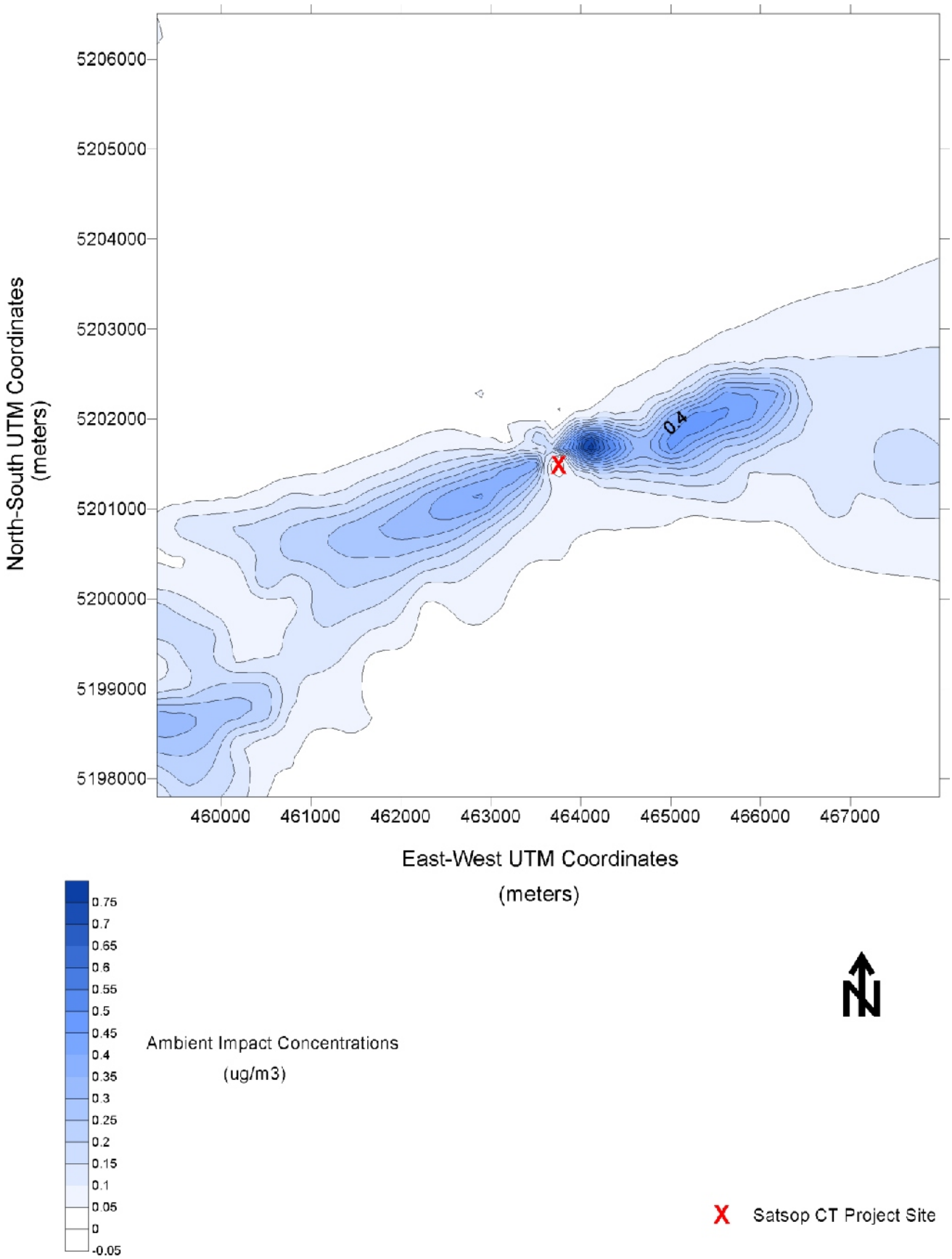


Figure 6.1-16

Annual NO_x Impact Concentrations

46866002.01_53.cdr

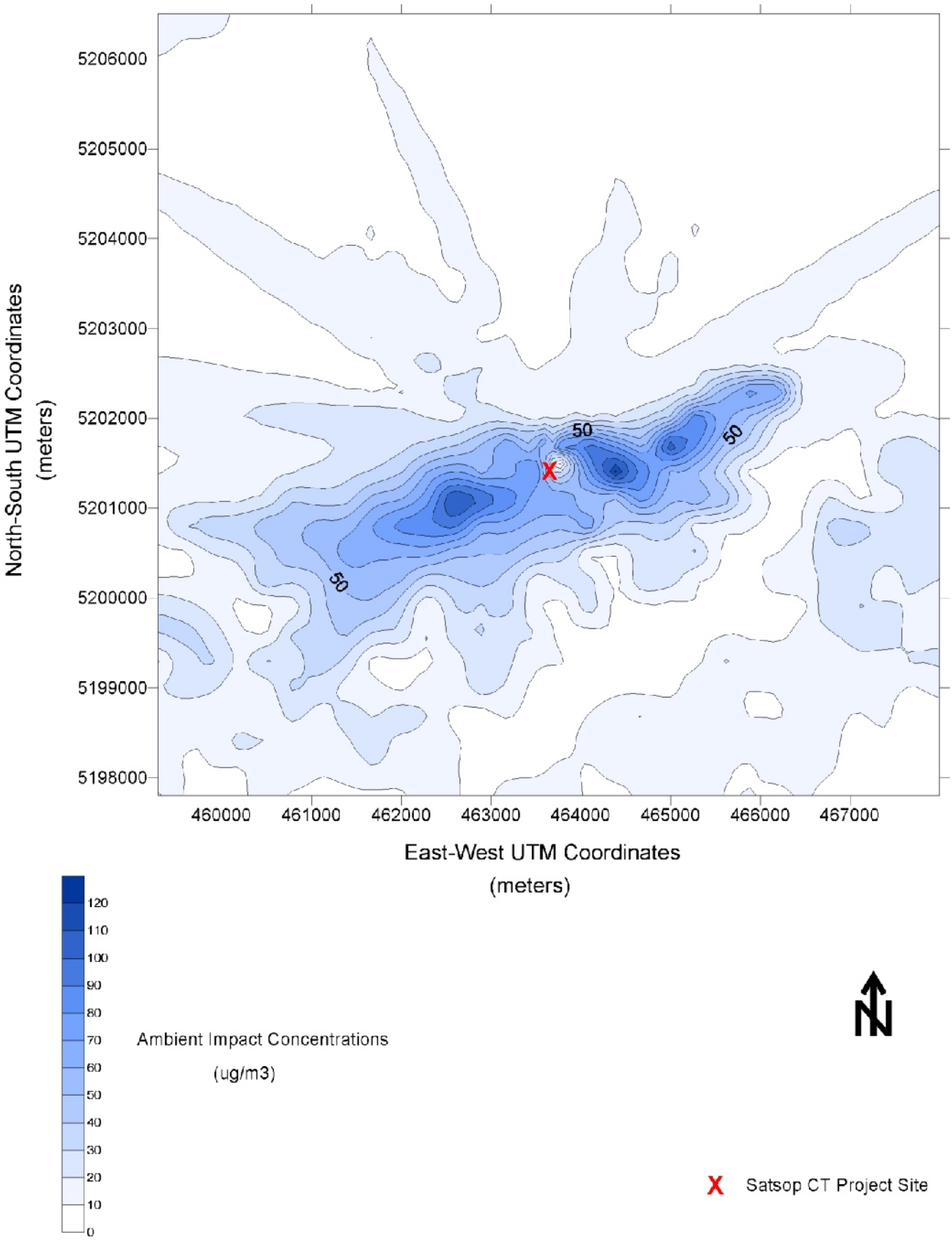


Figure 6.1-17

CO 8-Hour Impact Concentrations

46866002.01_53.cdr

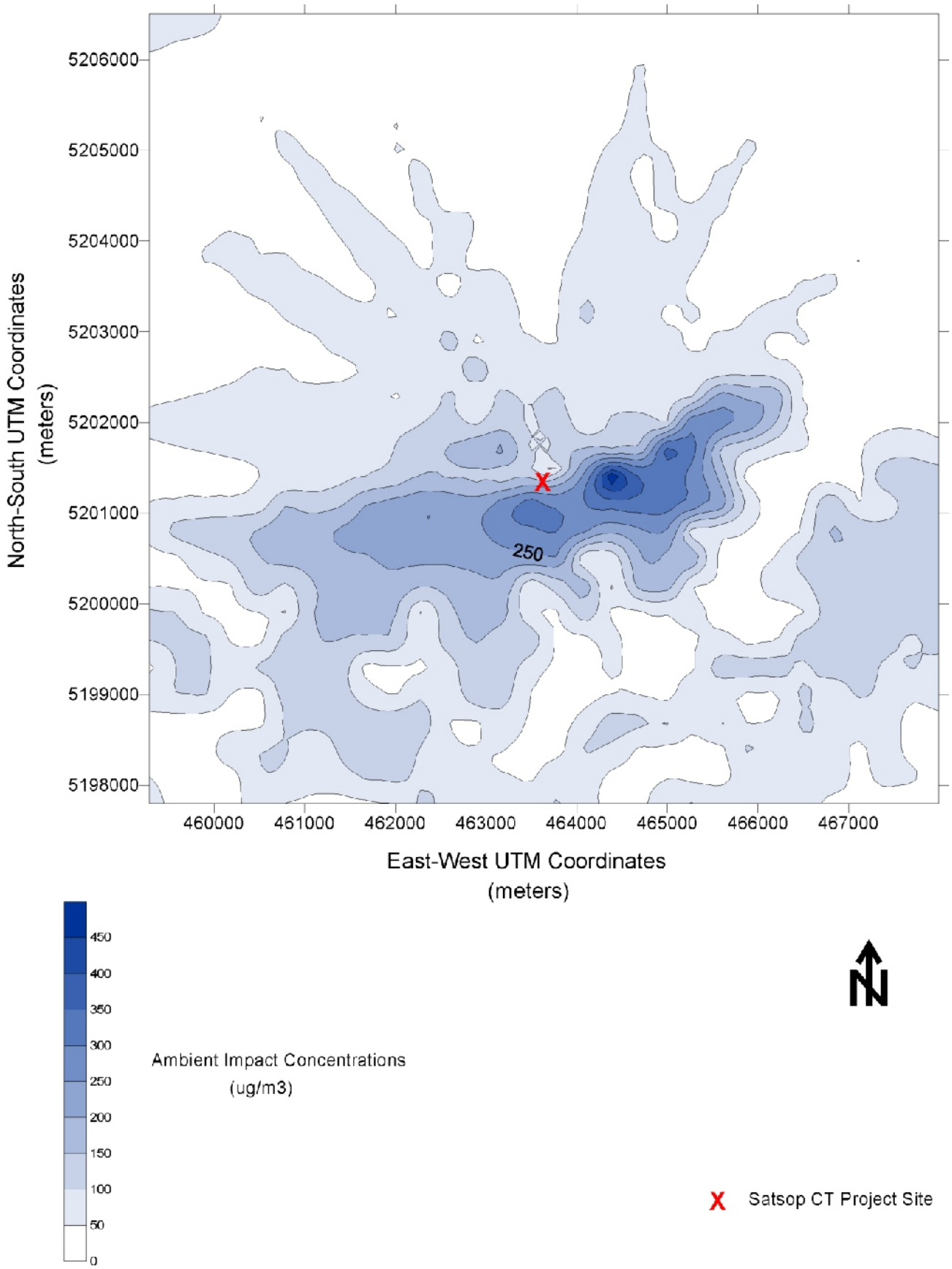


Figure 6.1-18

CO 1-Hour Impact Concentrations

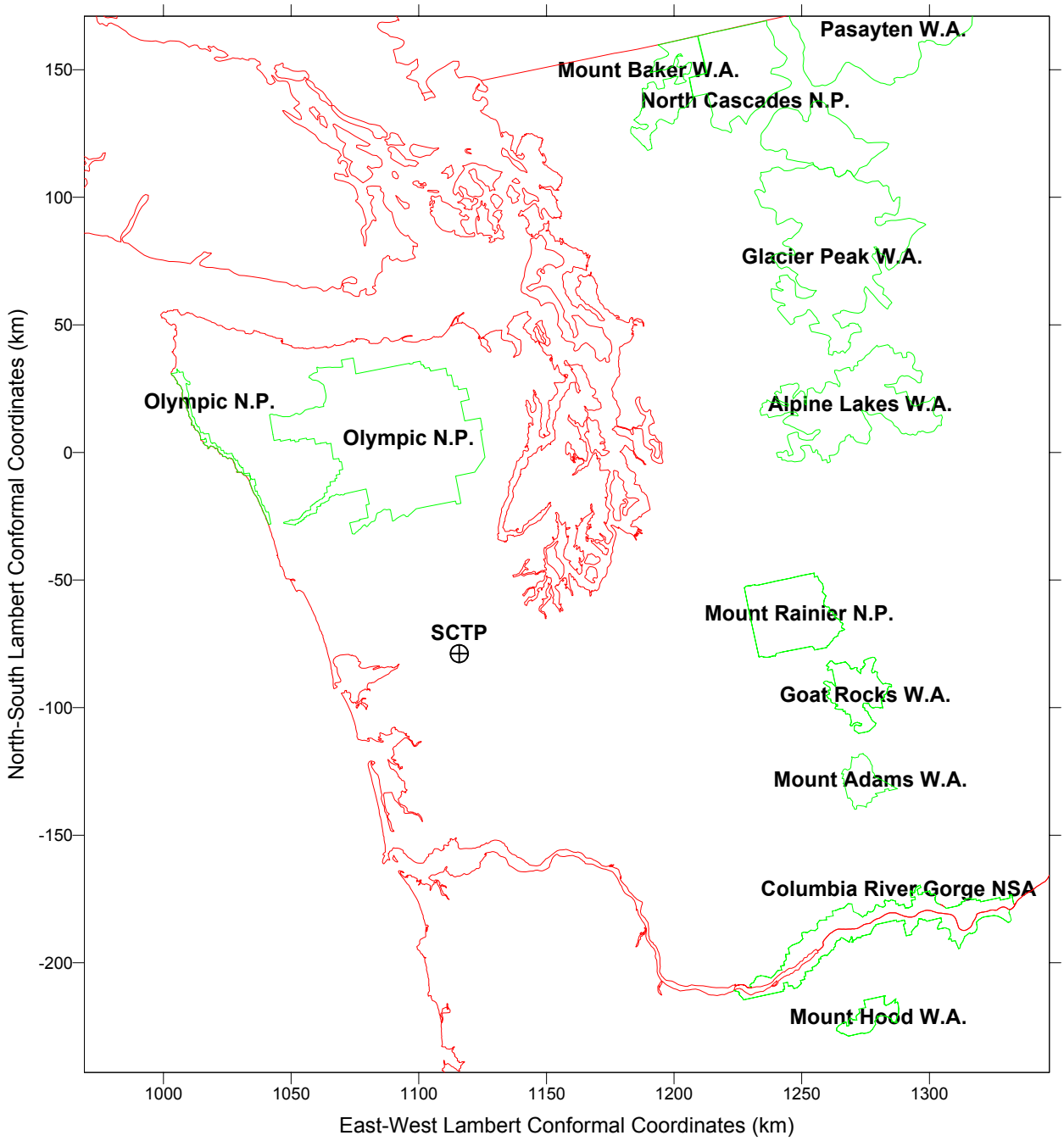


Figure 6.1-19

Study Domain with Location of Class I Areas

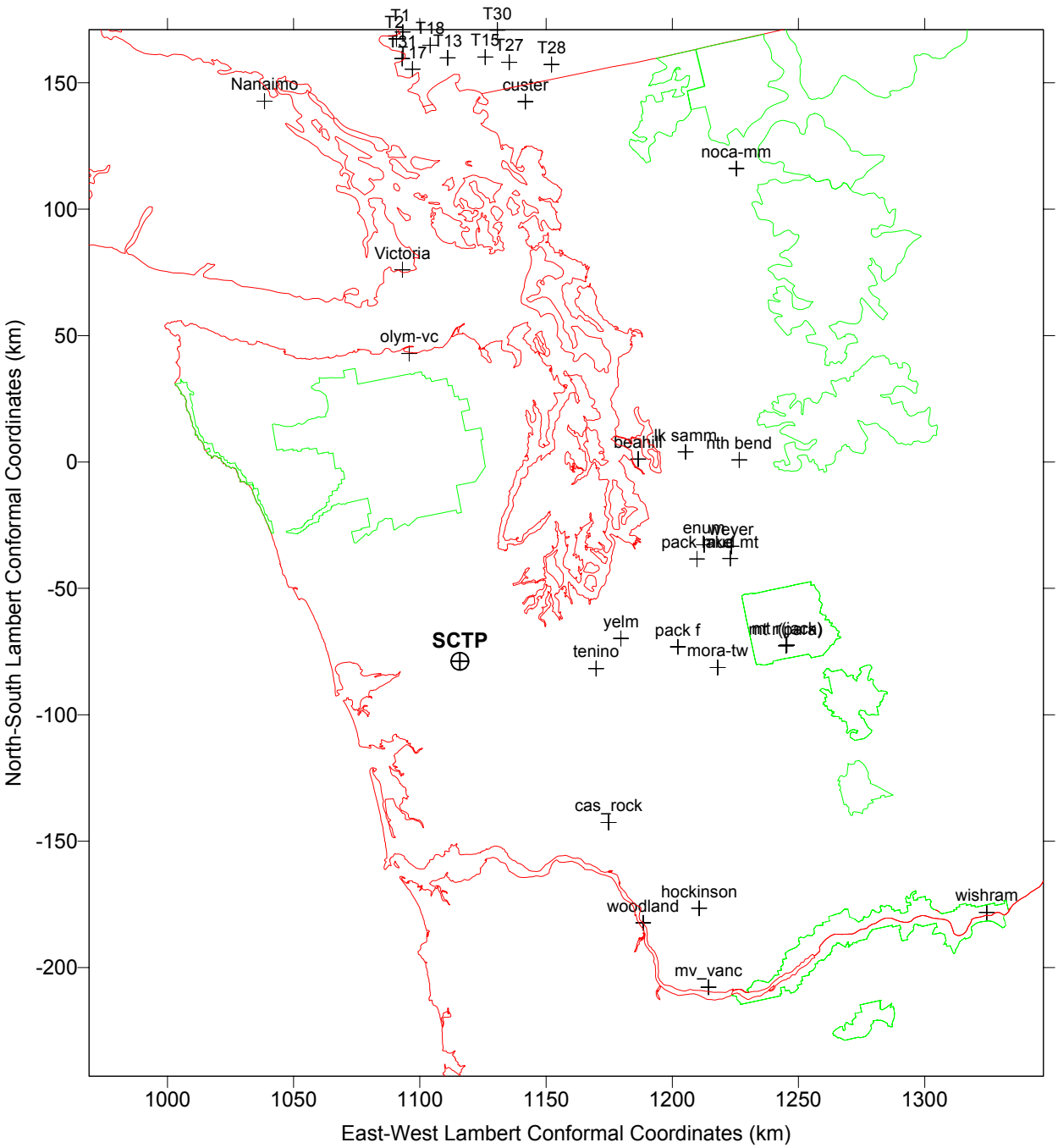


Figure 6.1-20

Location of Ozone Stations

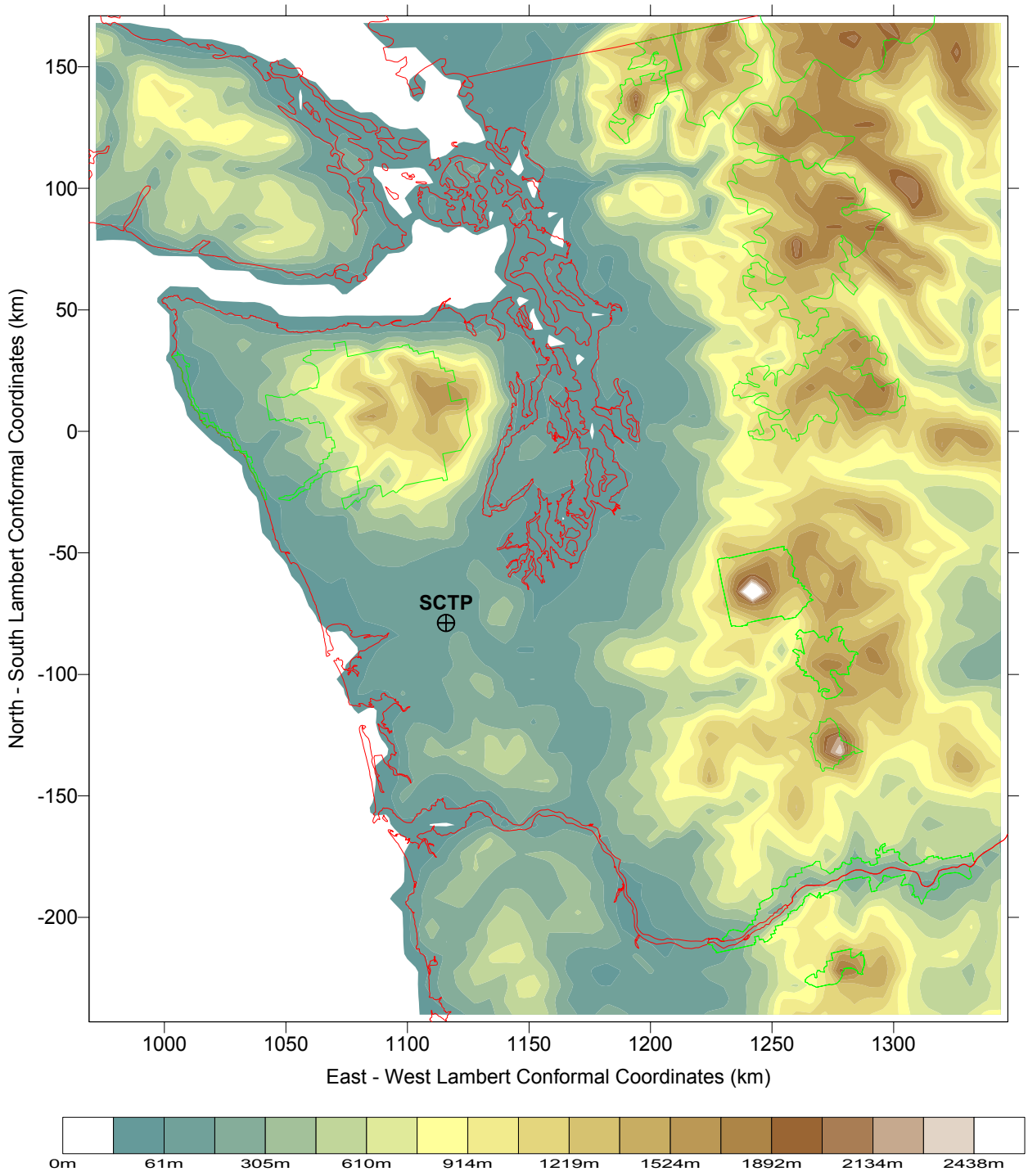


Figure 6.1-21

Study Terrain, Grid Mesh Size of 6 km

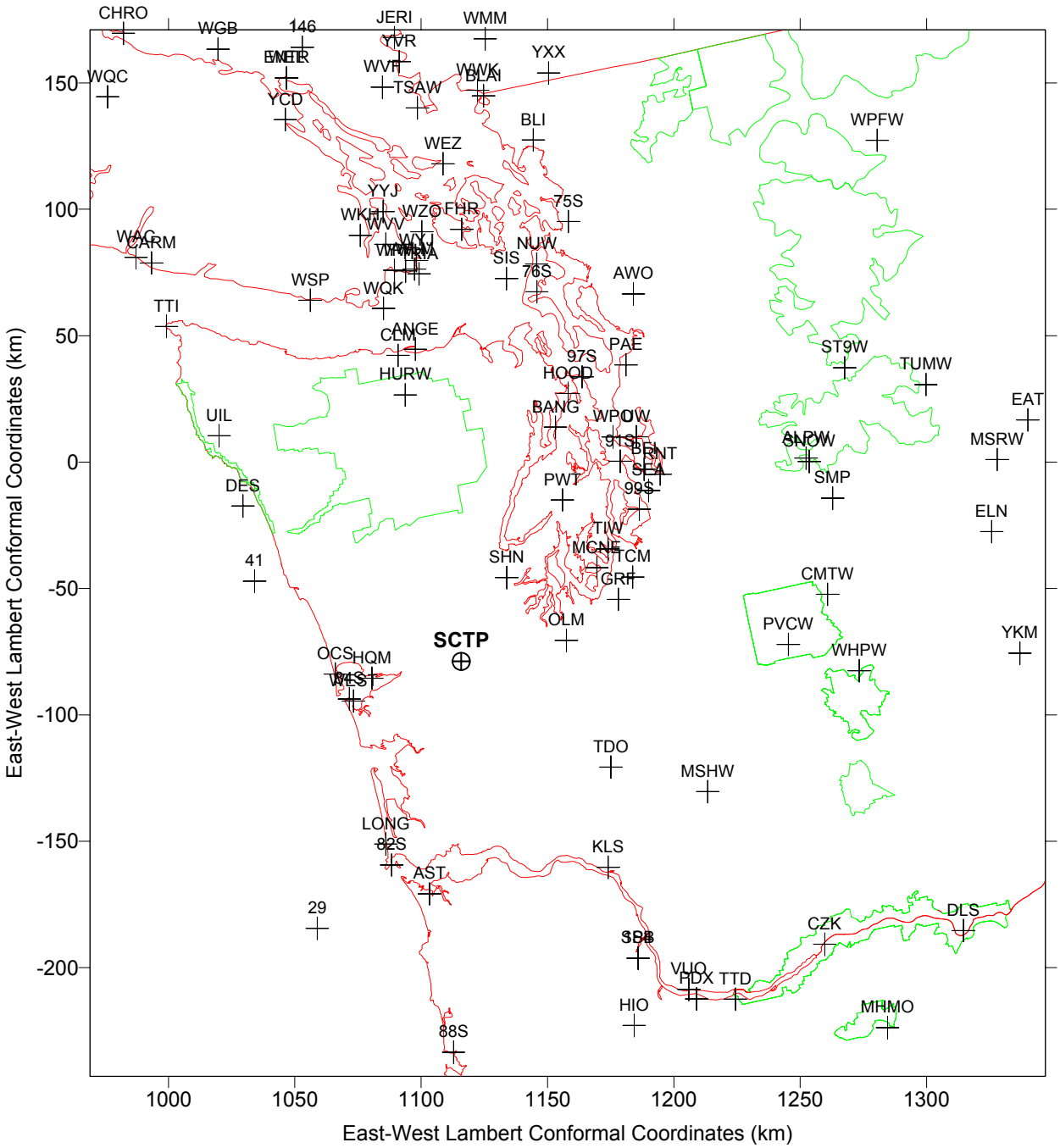


Figure 6.1-22

Surface Station Locations

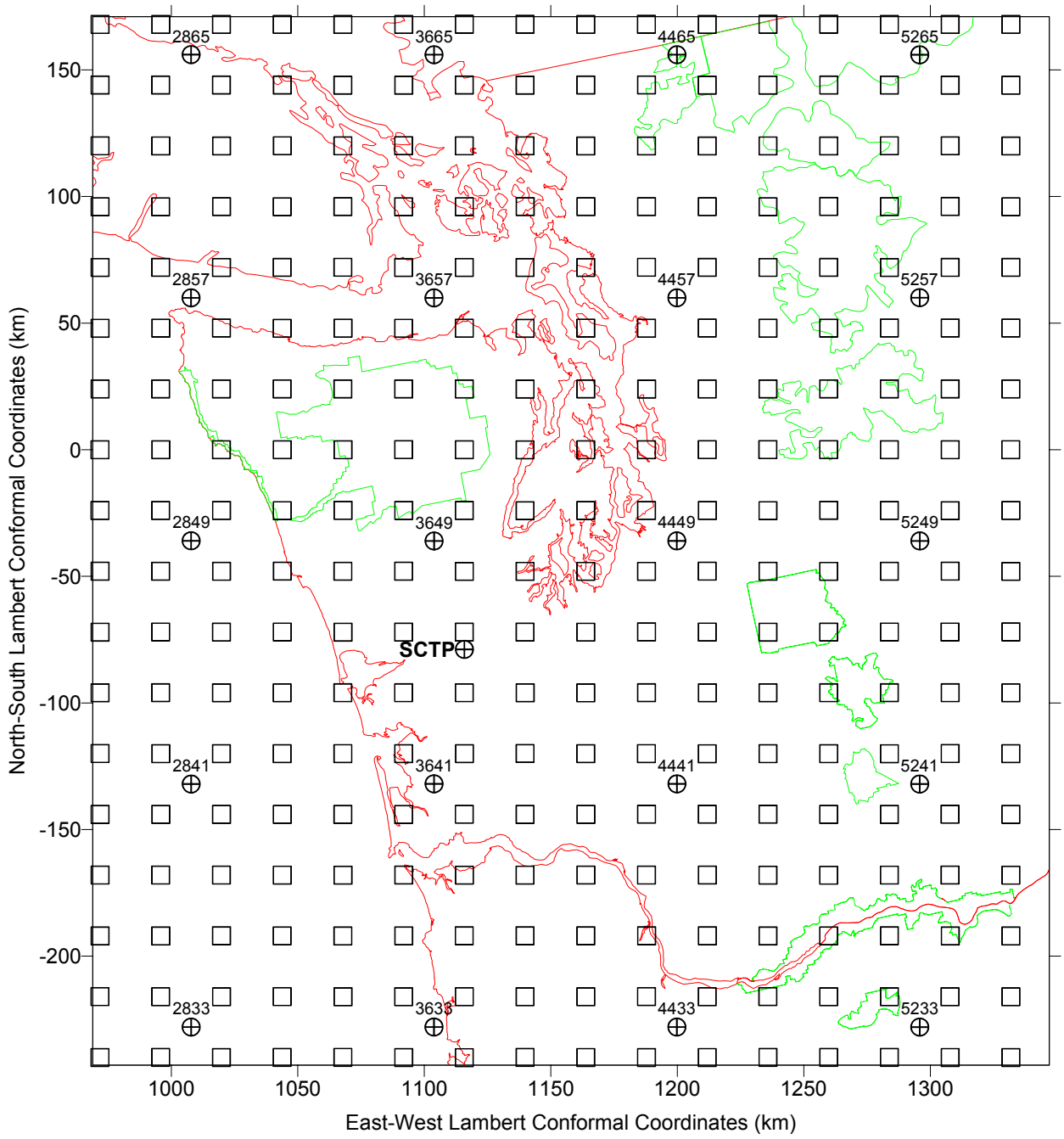


Figure 6.1-23

Location of MM5 Pseudo Stations, Squares – Precipitation and Circles – Upper Air

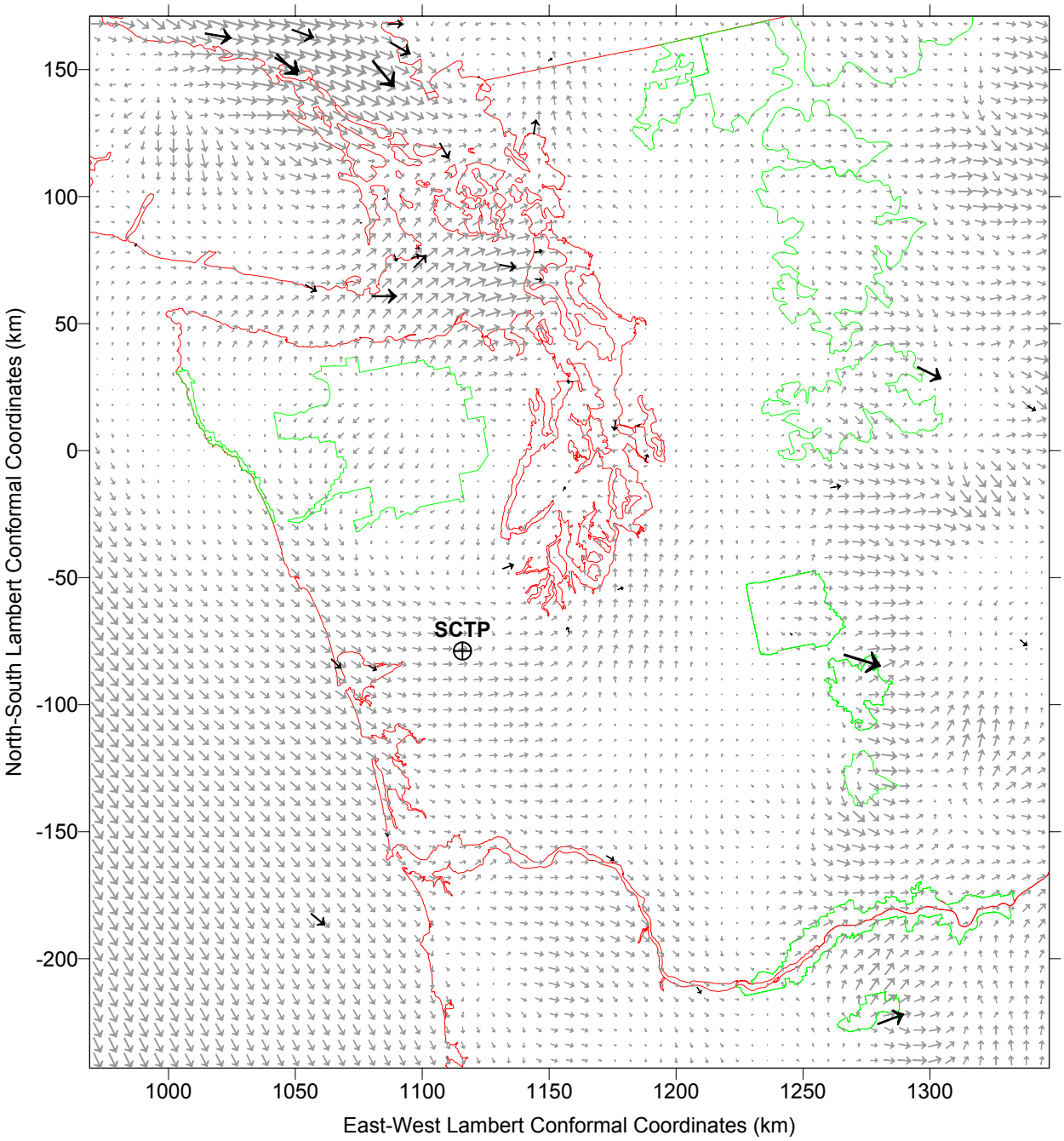


Figure 6.1-24

CALMET Surface Winds of 6/1/98 hour 0400-0500 PST, Surface Observations Also Shown

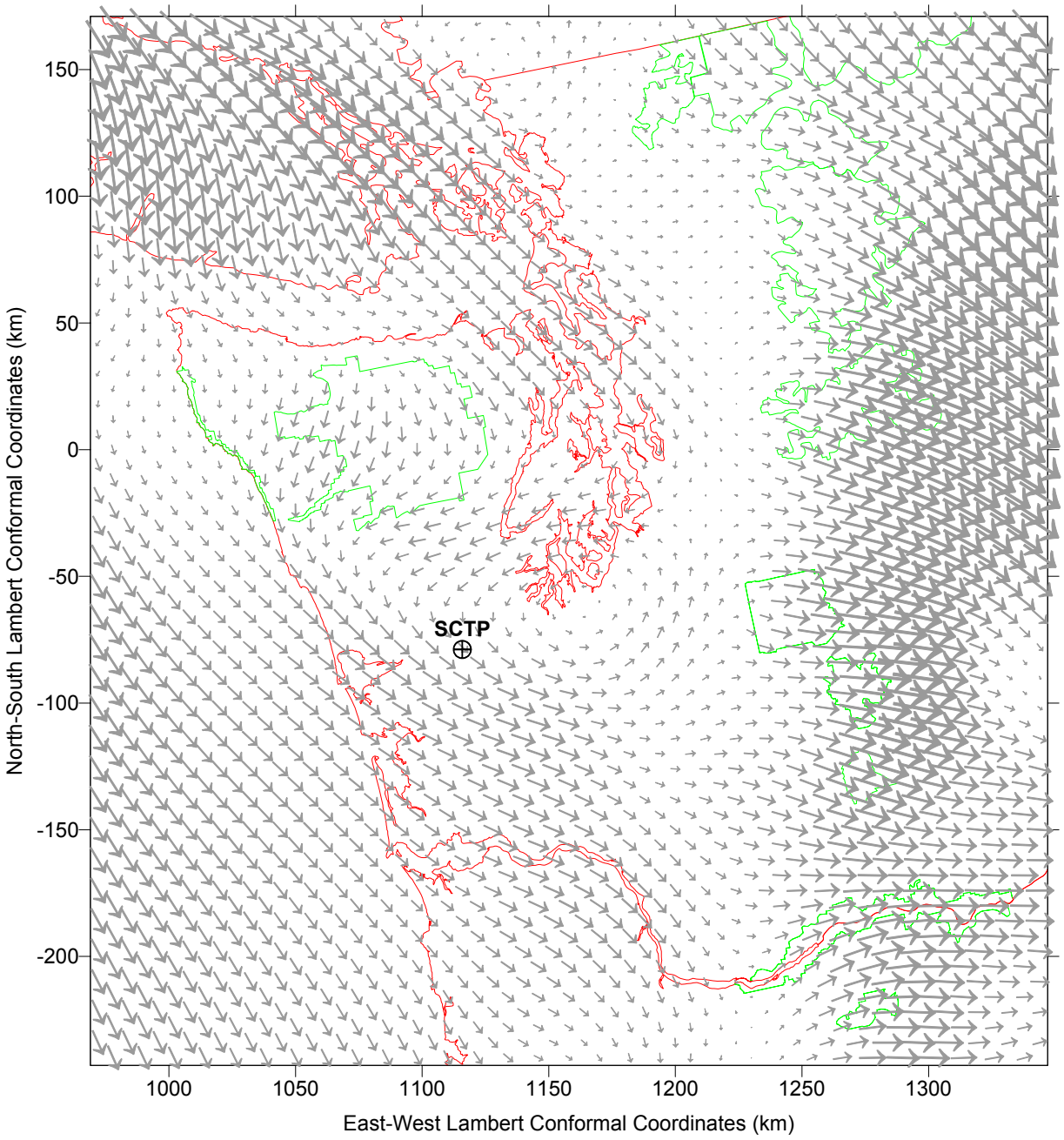


Figure 6.1-25

CALMET Level 6 (300 m) Winds 6/1/98 hour 0400-0500 PST

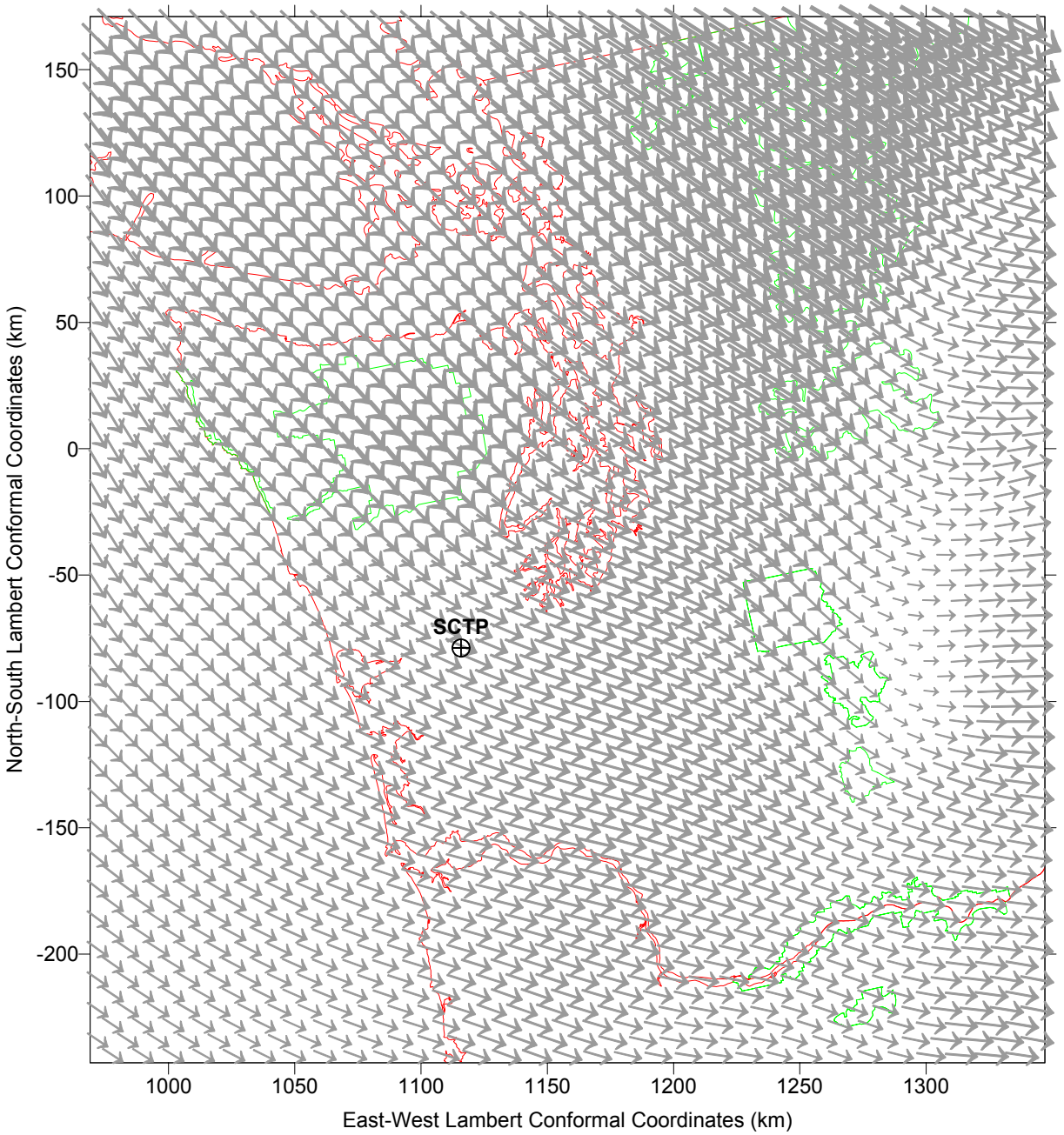


Figure 6.1-26

CALMET Level 10 (3000 m) Winds 6/1/98 hour 0400-0500 PST

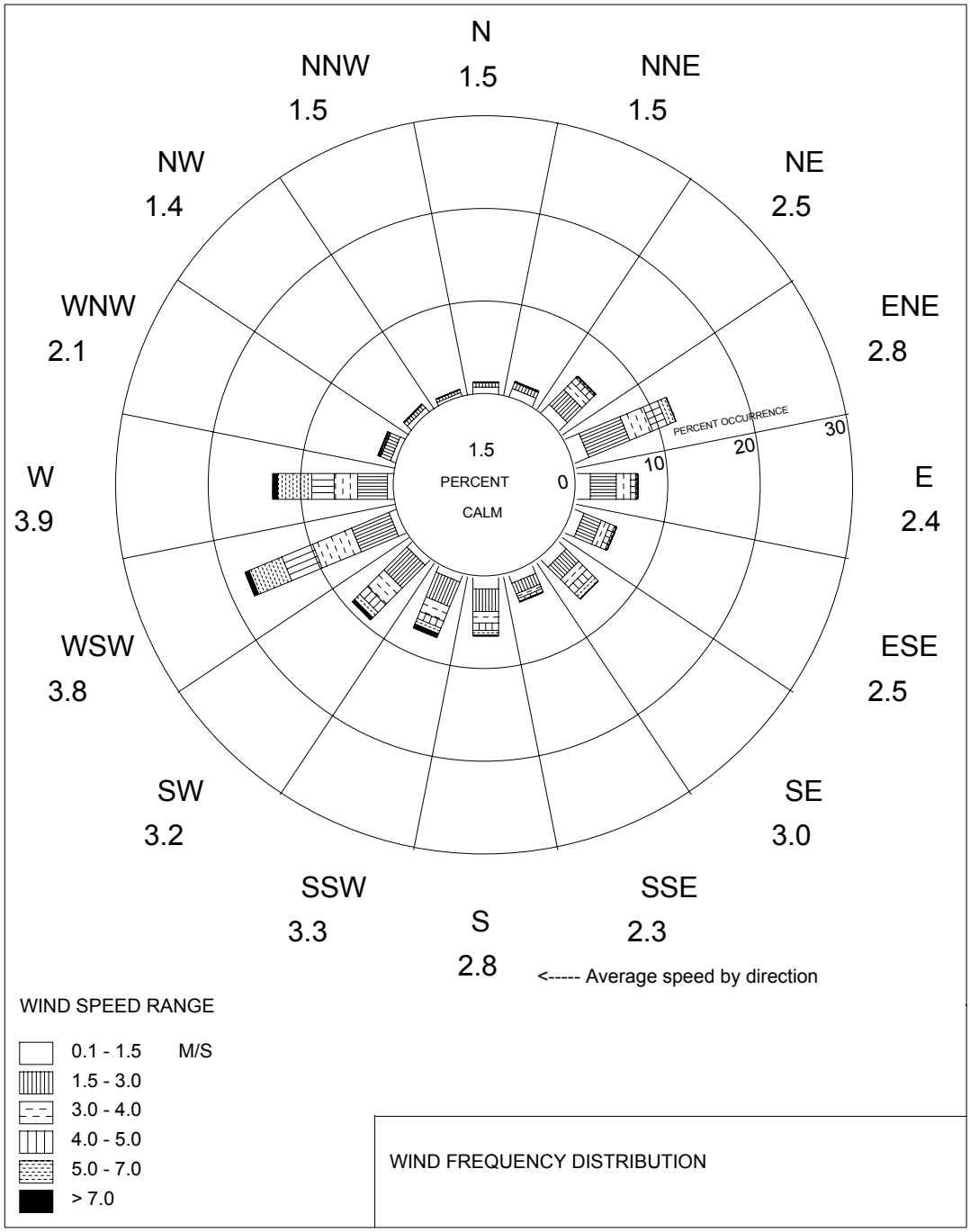


Figure 6.1-27

Satsop Site Surface Winds

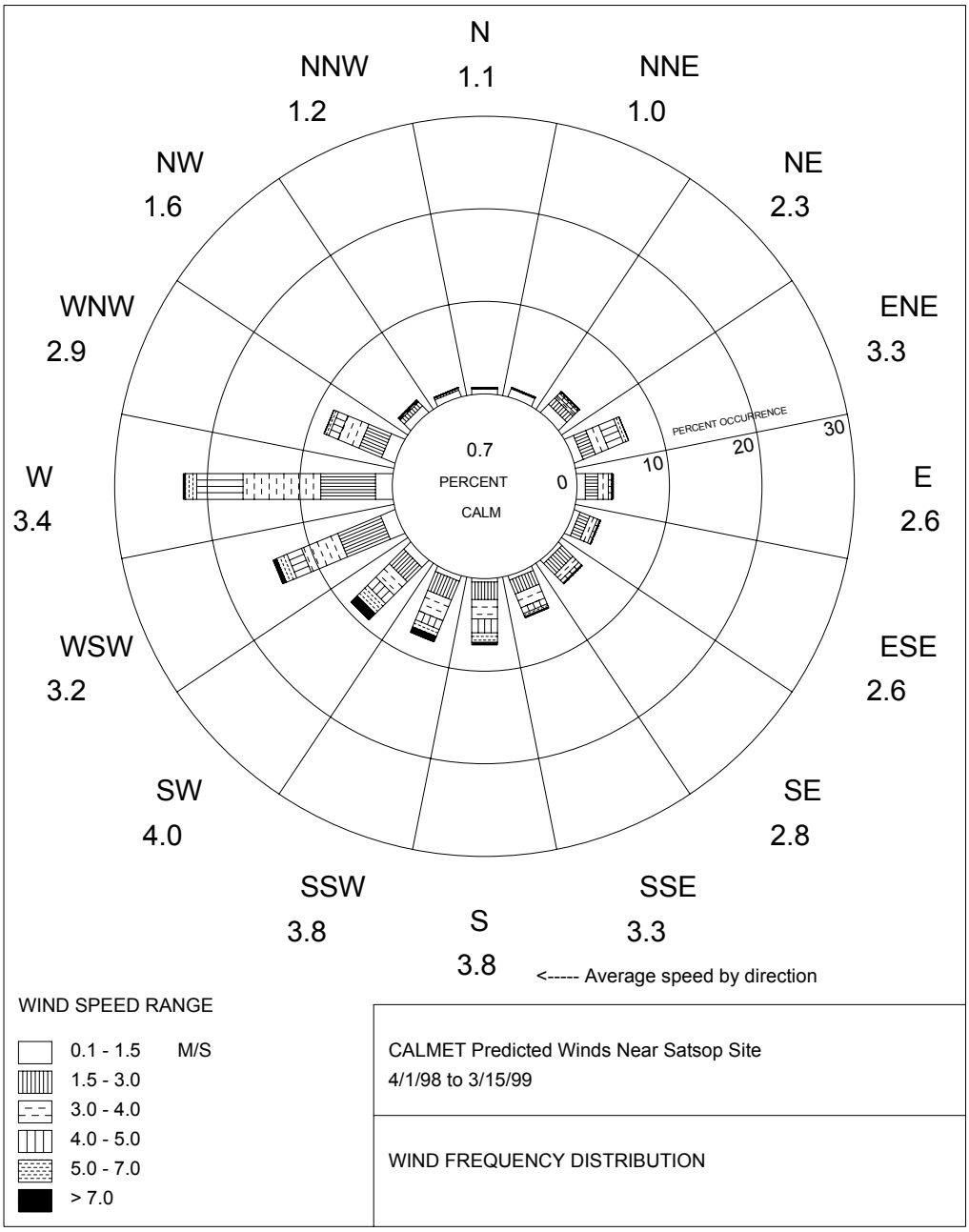


Figure 6.1-28

CALMET Surface Winds

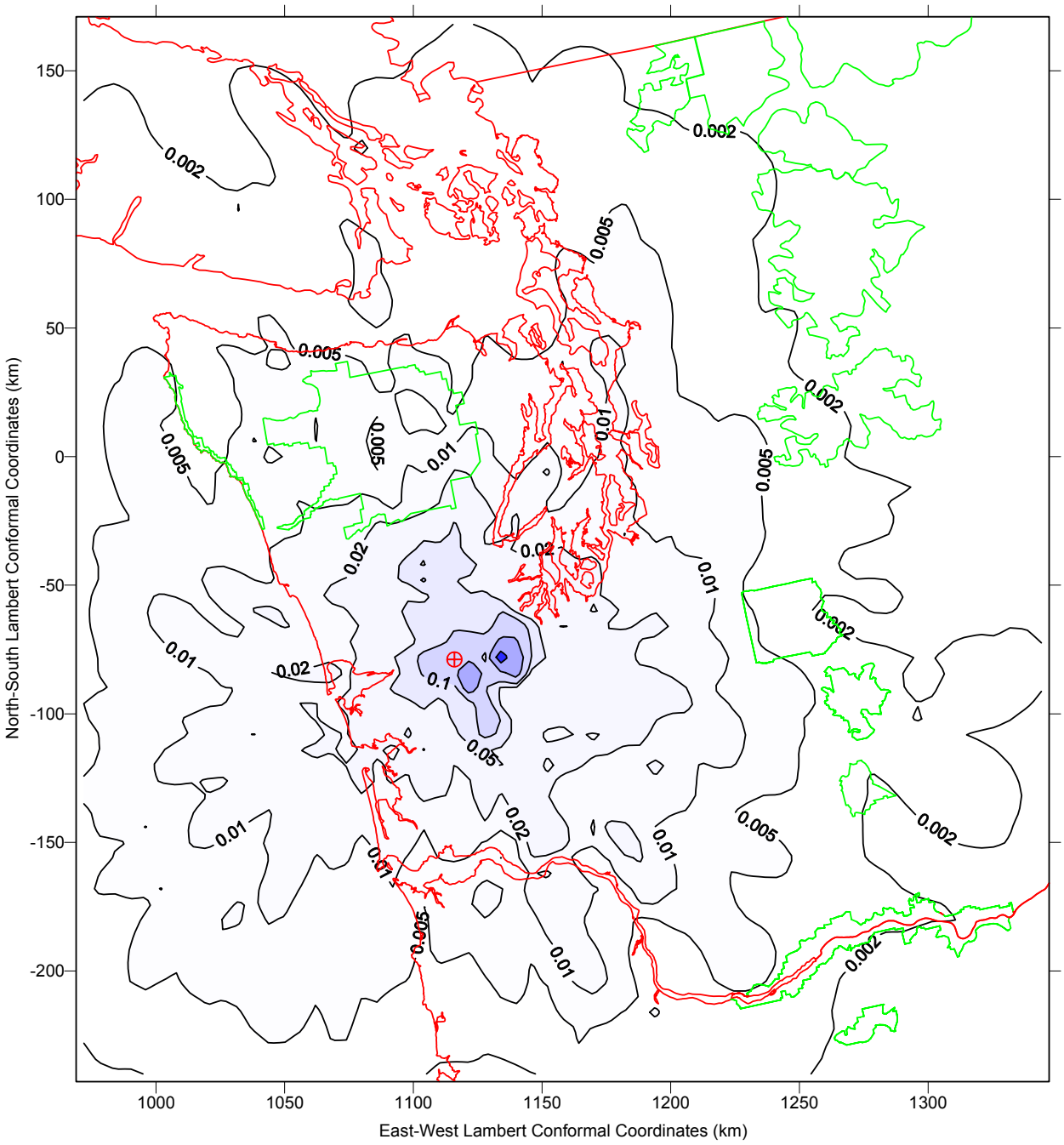


Figure 6.1-29

Three-Hour Maximum SO_2 ($\mu g/m^3$), April 1, 1998, through March 15, 1999

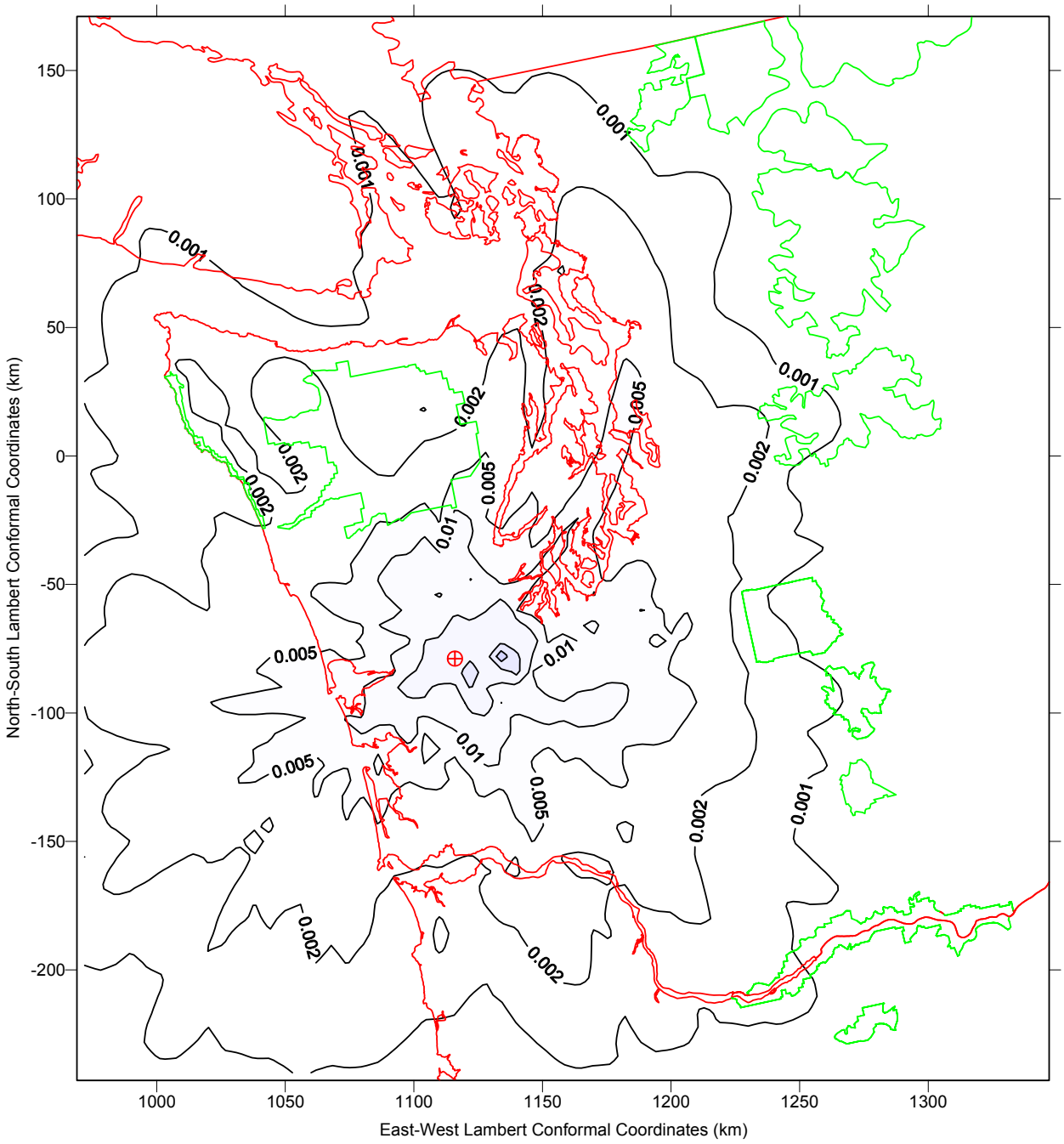


Figure 6.1-30

Twenty-Four Hour Maximum SO_2 ($\mu g/m^3$), April 1, 1998, through March 15, 1999

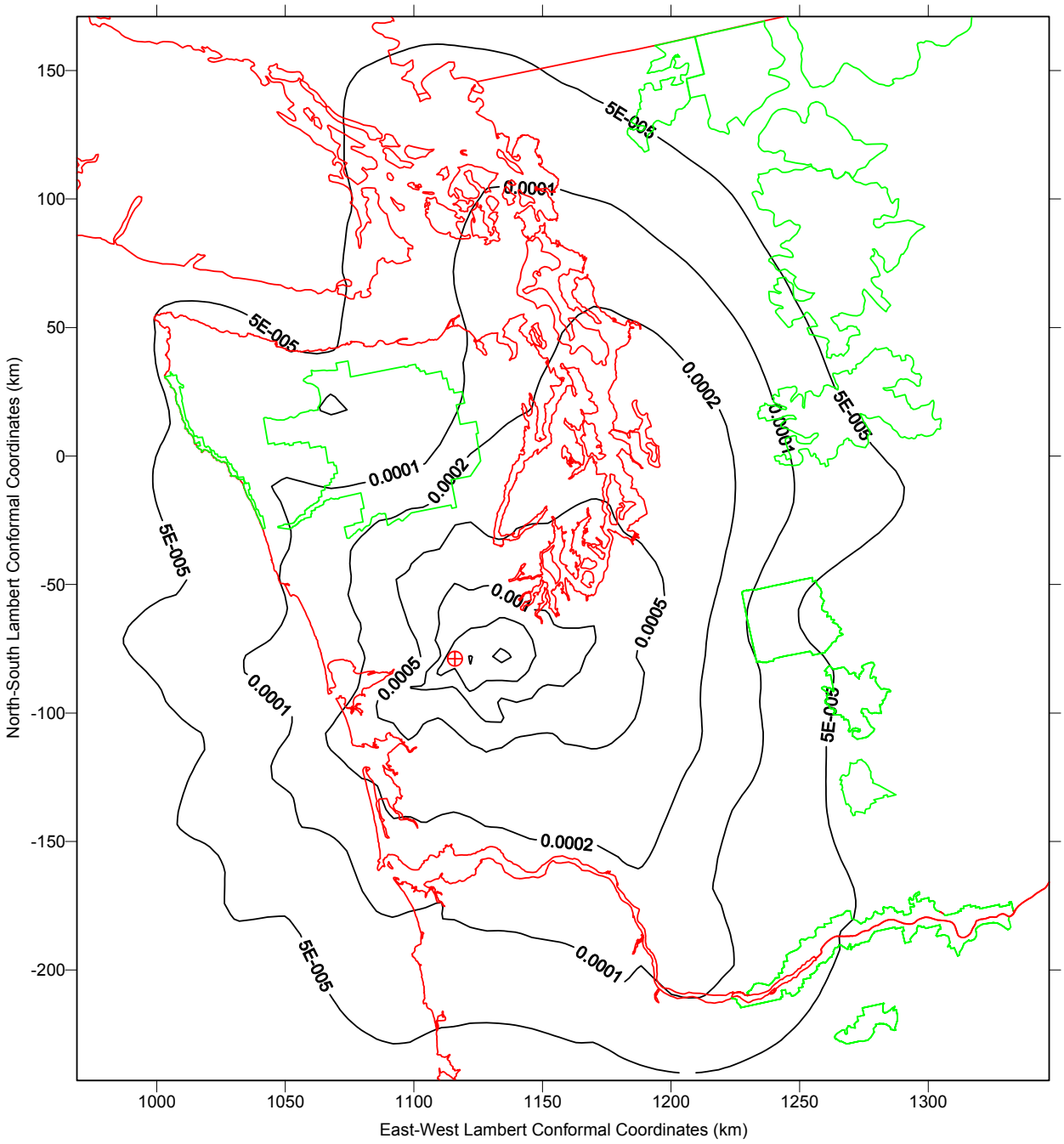


Figure 6.1-31

Annual SO_2 ($\mu g/m^3$), April 1, 1998, through March 15, 1999

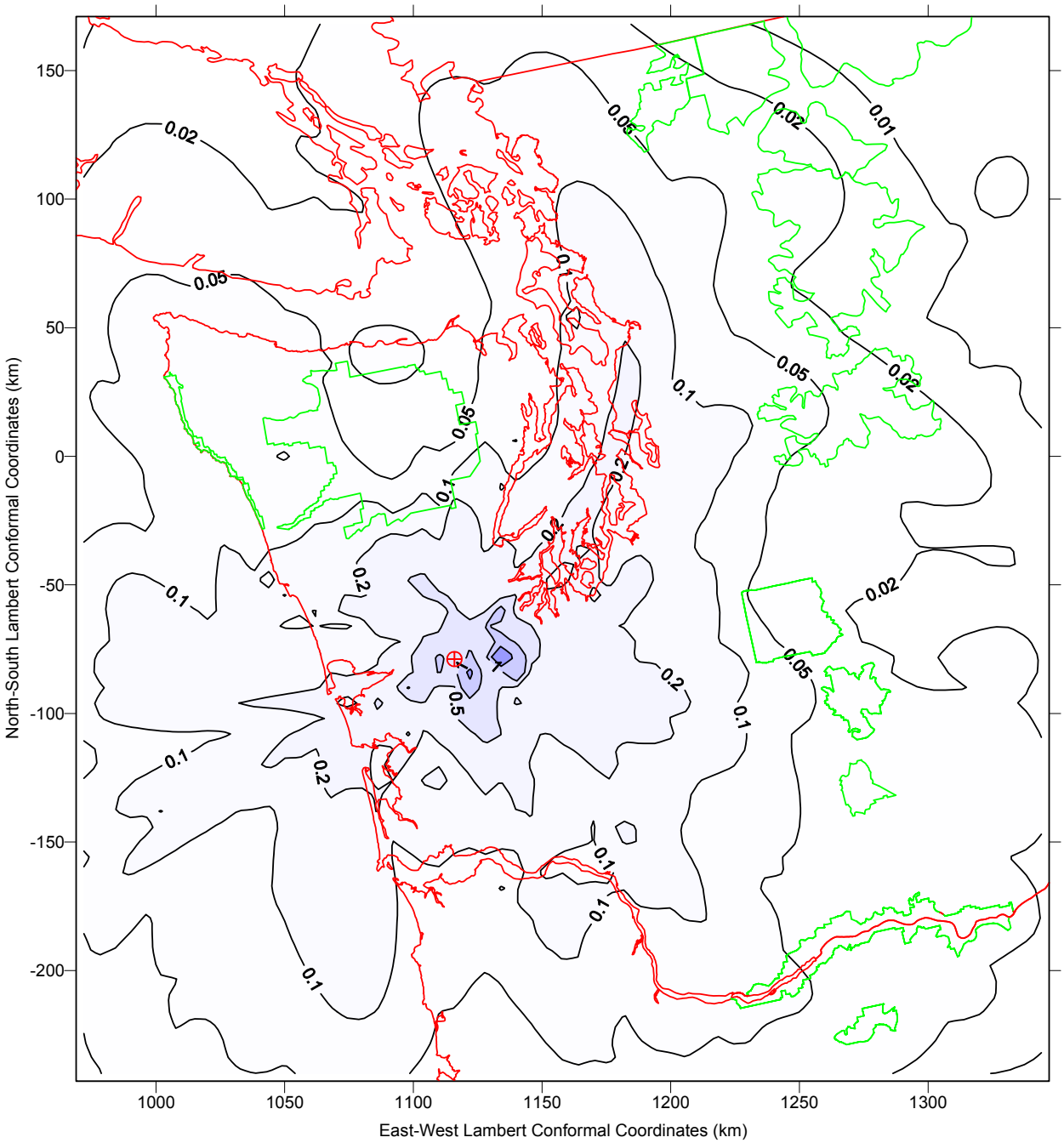


Figure 6.1-32

Twenty-Four Hour Maximum PM_{10} ($\mu g/m^3$), Including Sulfates and Nitrates April 1, 1998, through March 15, 1999

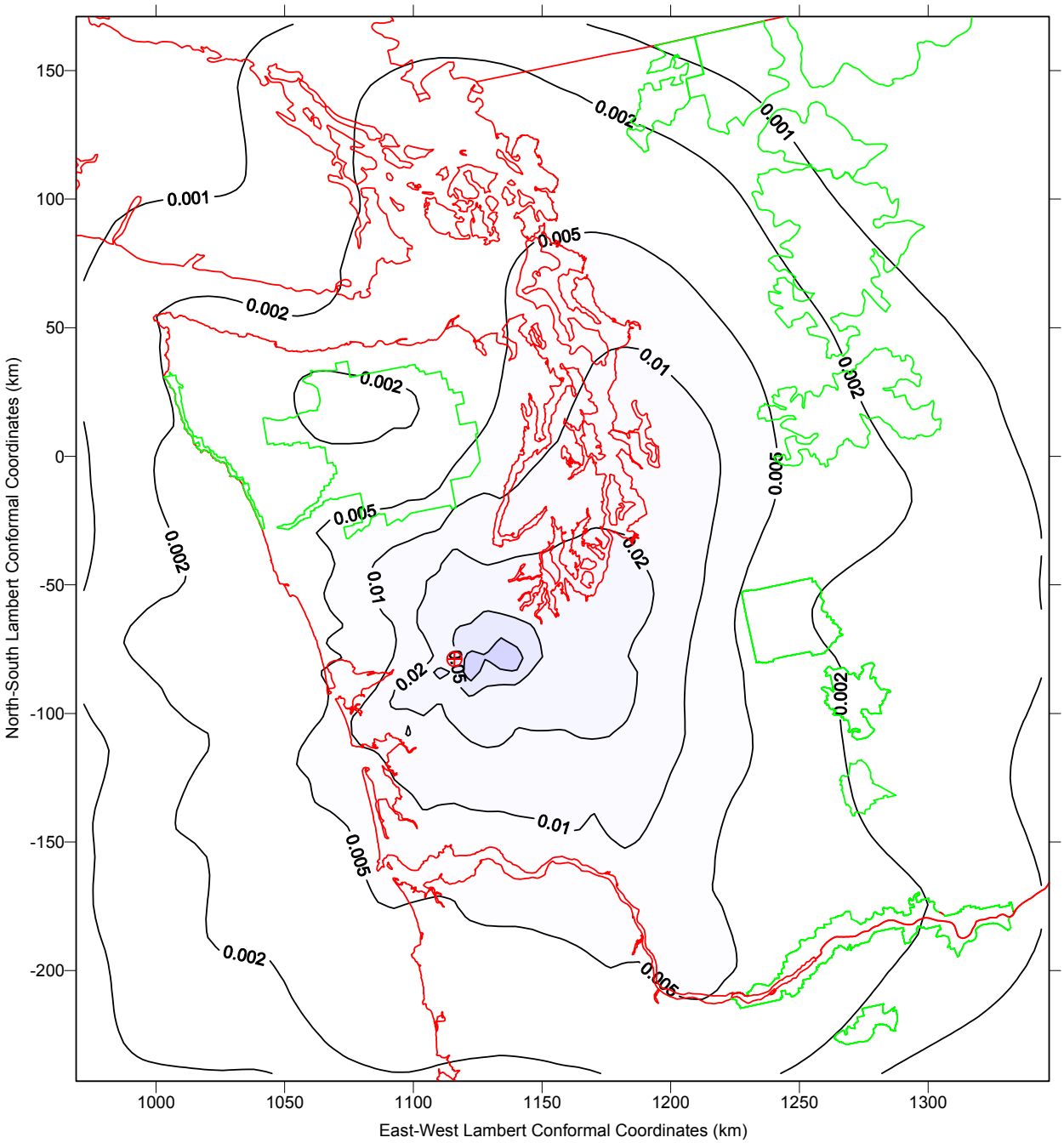


Figure 6.1-33

Annual Average PM_{10} ($\mu g/m^3$), Including Sulfates and Nitrates
April 1, 1998, through March 15, 1999

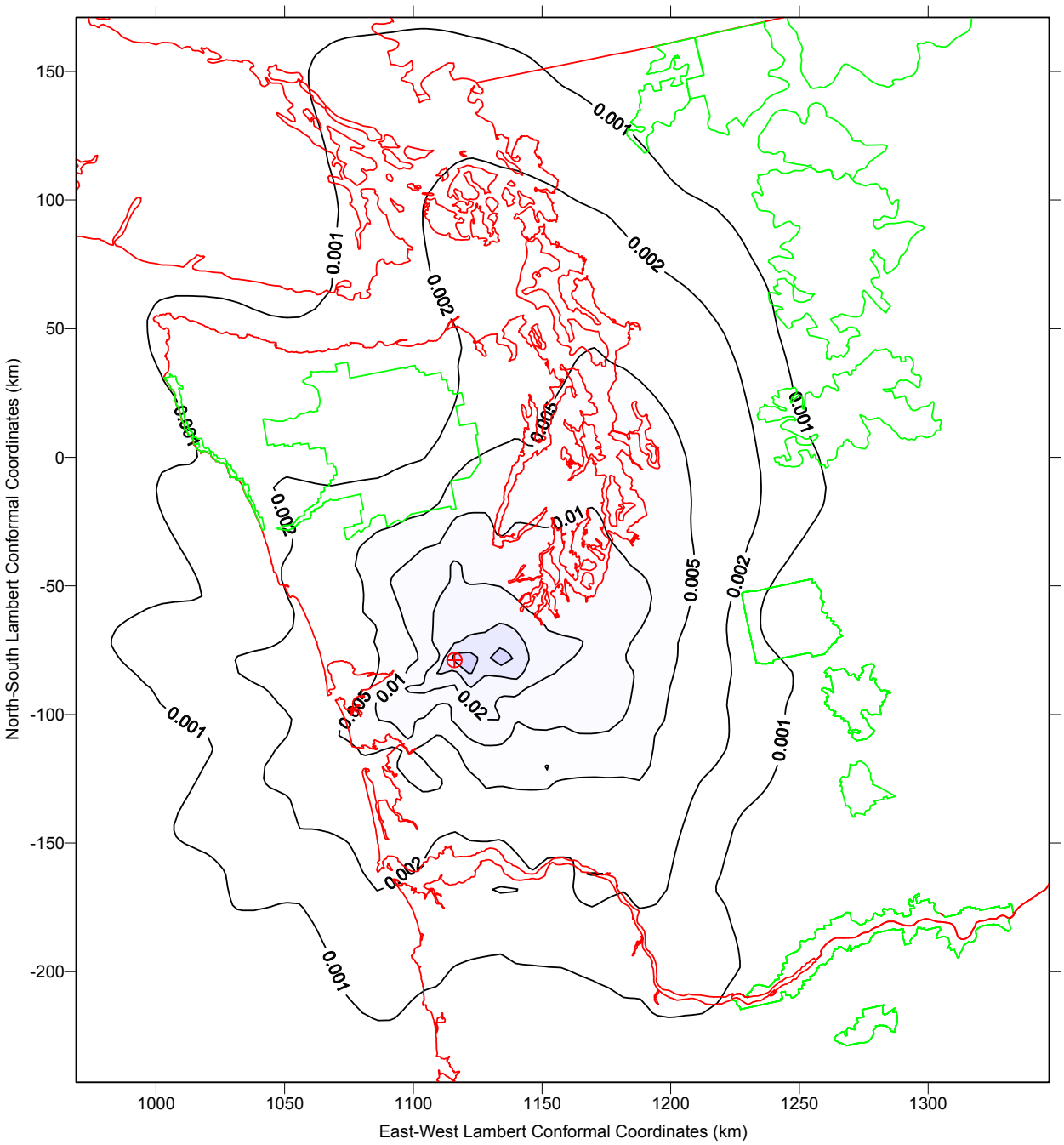


Figure 6.1-34

Annual Average NO_X ($\mu g/m^3$), April 1, 1998, through March 15, 1999

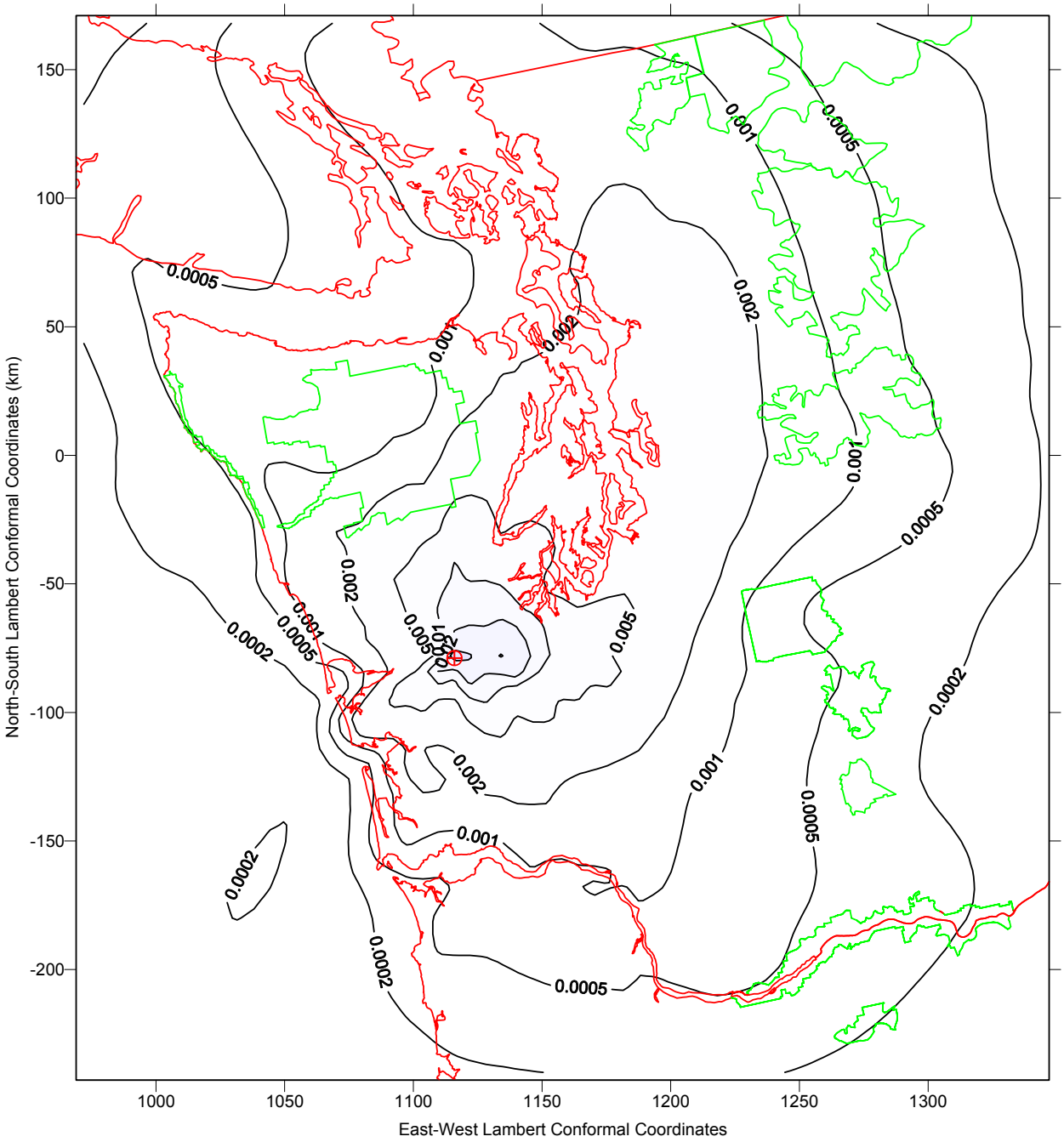


Figure 6.1-35

Total Annual Nitrogen Deposition (kg/ha/yr), Includes Wet & Dry Deposit and Ammonium Ion

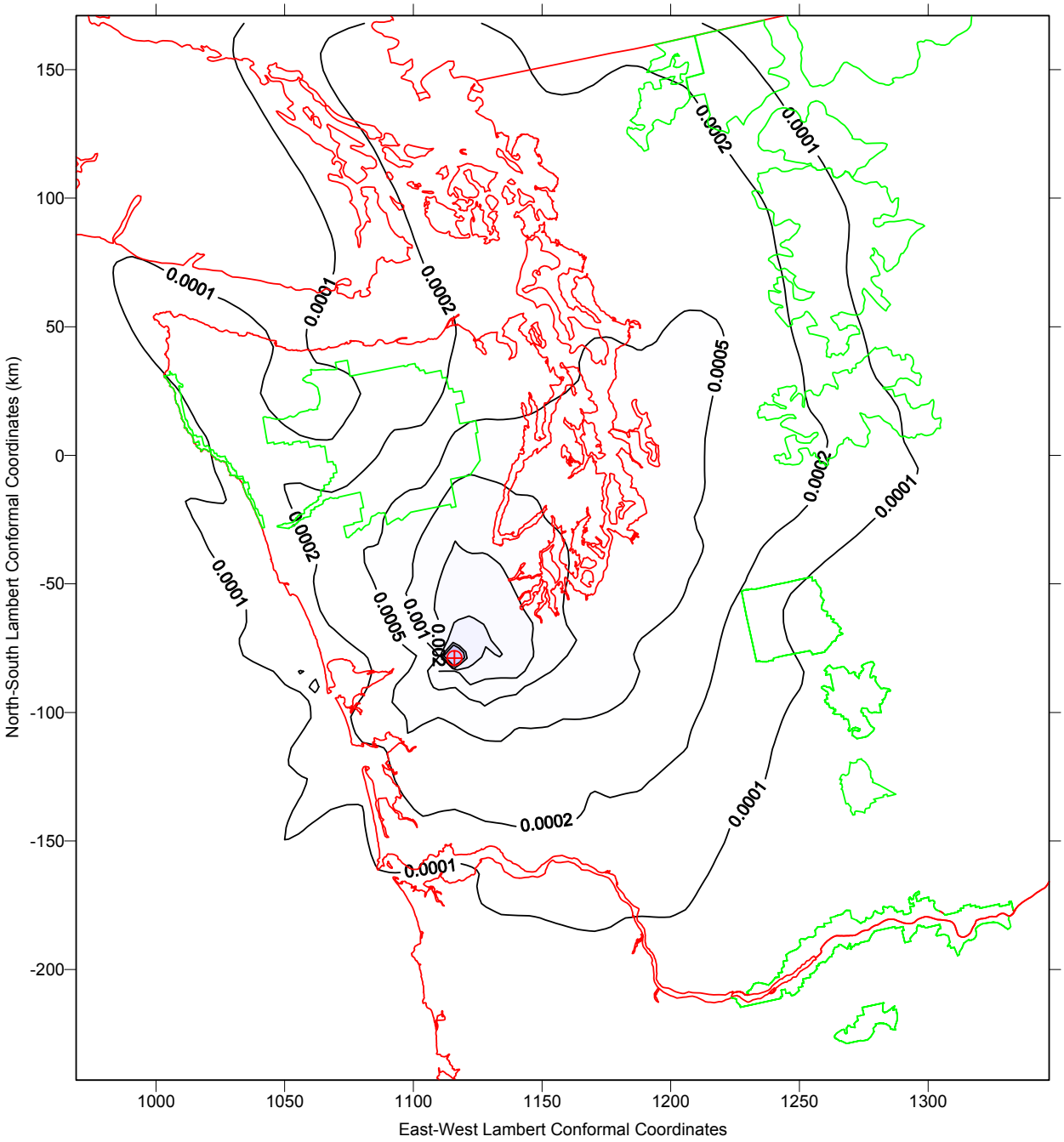


Figure 6.1-36

Total Annual Sulfur Deposition (kg/ha/yr), Includes Wet & Dry Deposition

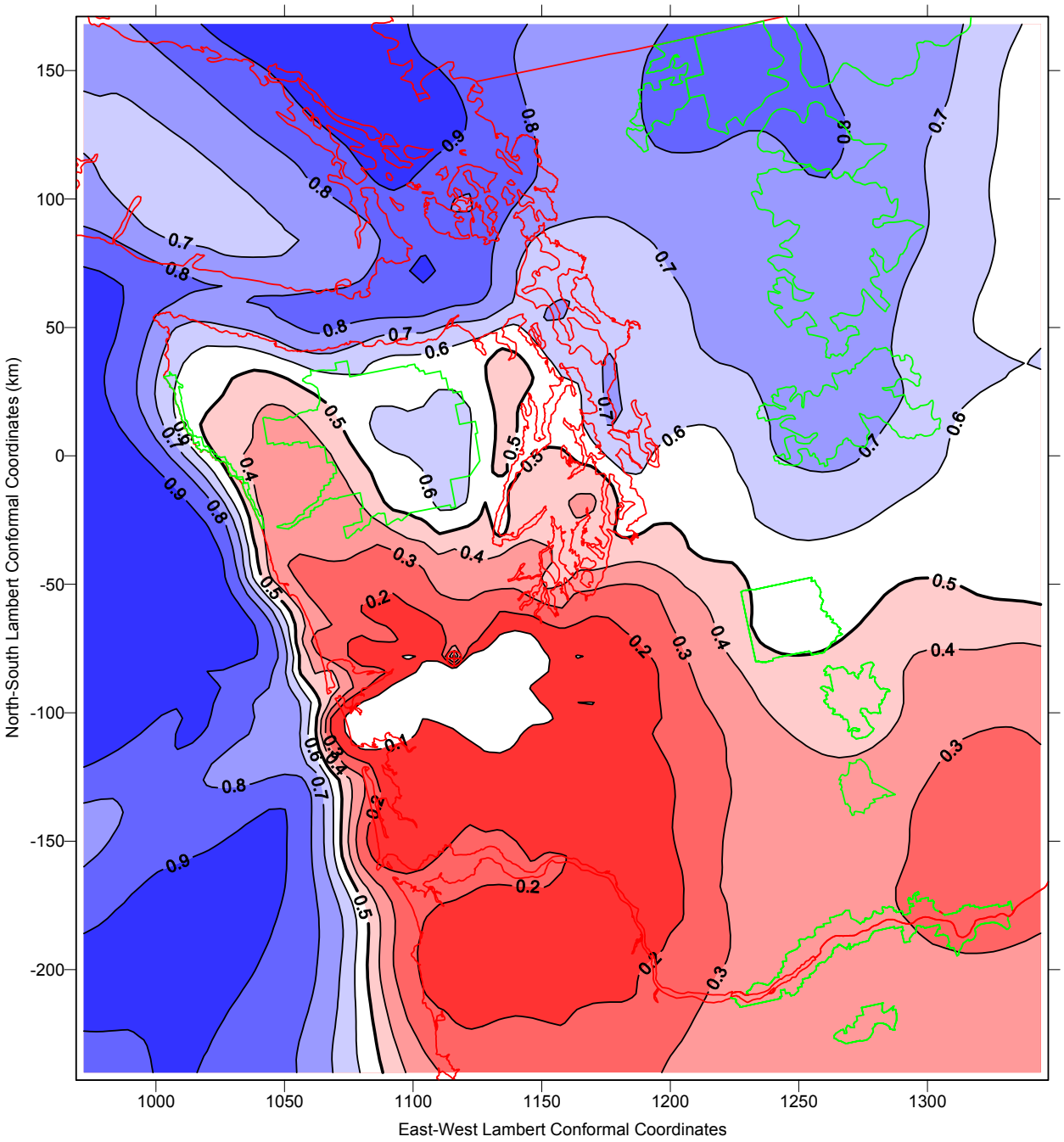


Figure 6.1-37

Ratio of Wet Over Total Annual Nitrogen Deposition

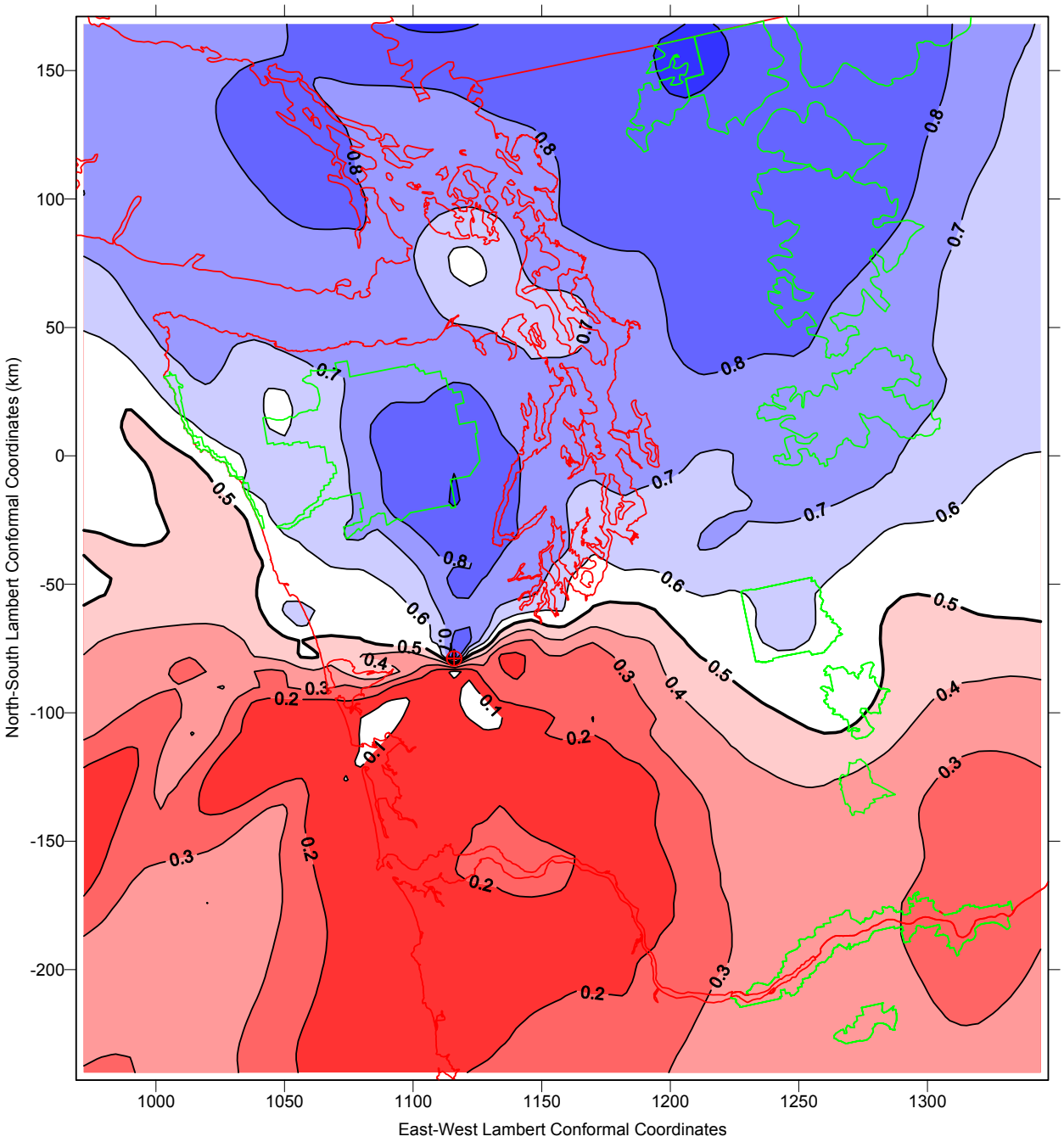


Figure 6.1-38

Ratio of Wet Over Total Annual Sulfur Deposition

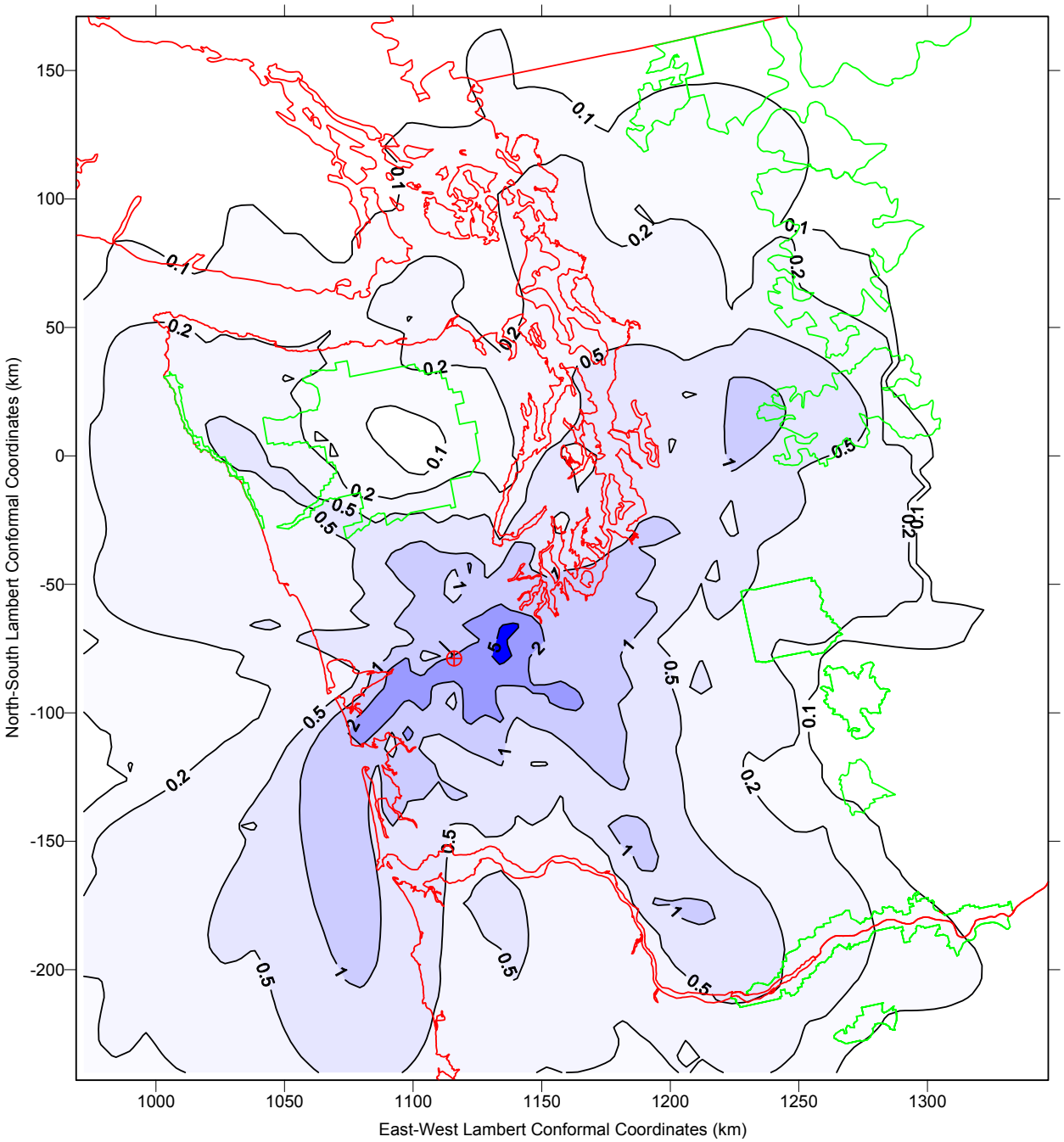


Figure 6.1-39

Twenty-Four Hour Maximum Extinction Coefficients (1/MM) from SCTP, April 1 to May 31, 1998

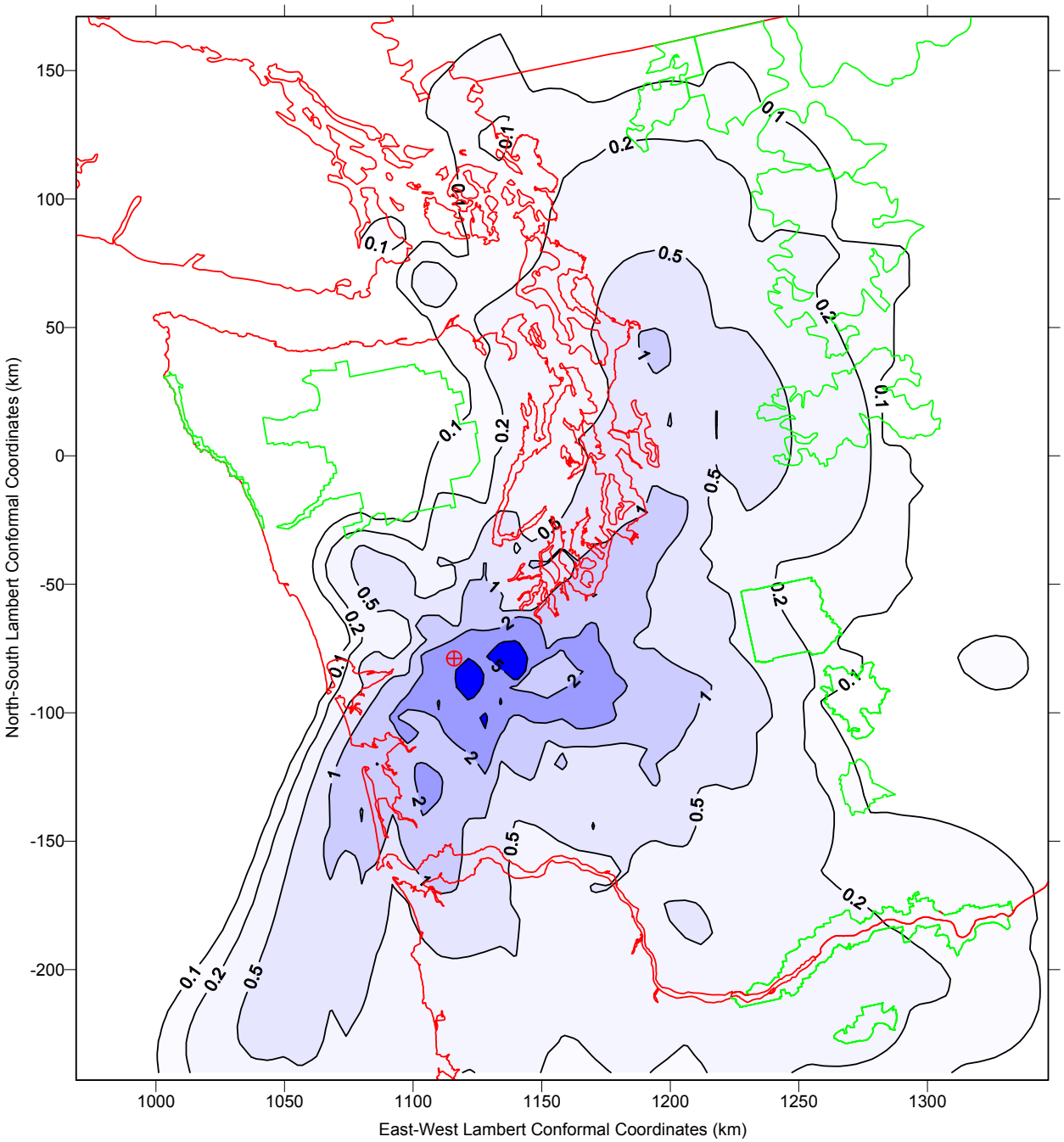


Figure 6.1-40

Twenty-Four Hour Maximum Extinction Coefficients (1/MM) from SCTP, June 1 to August 31, 1998

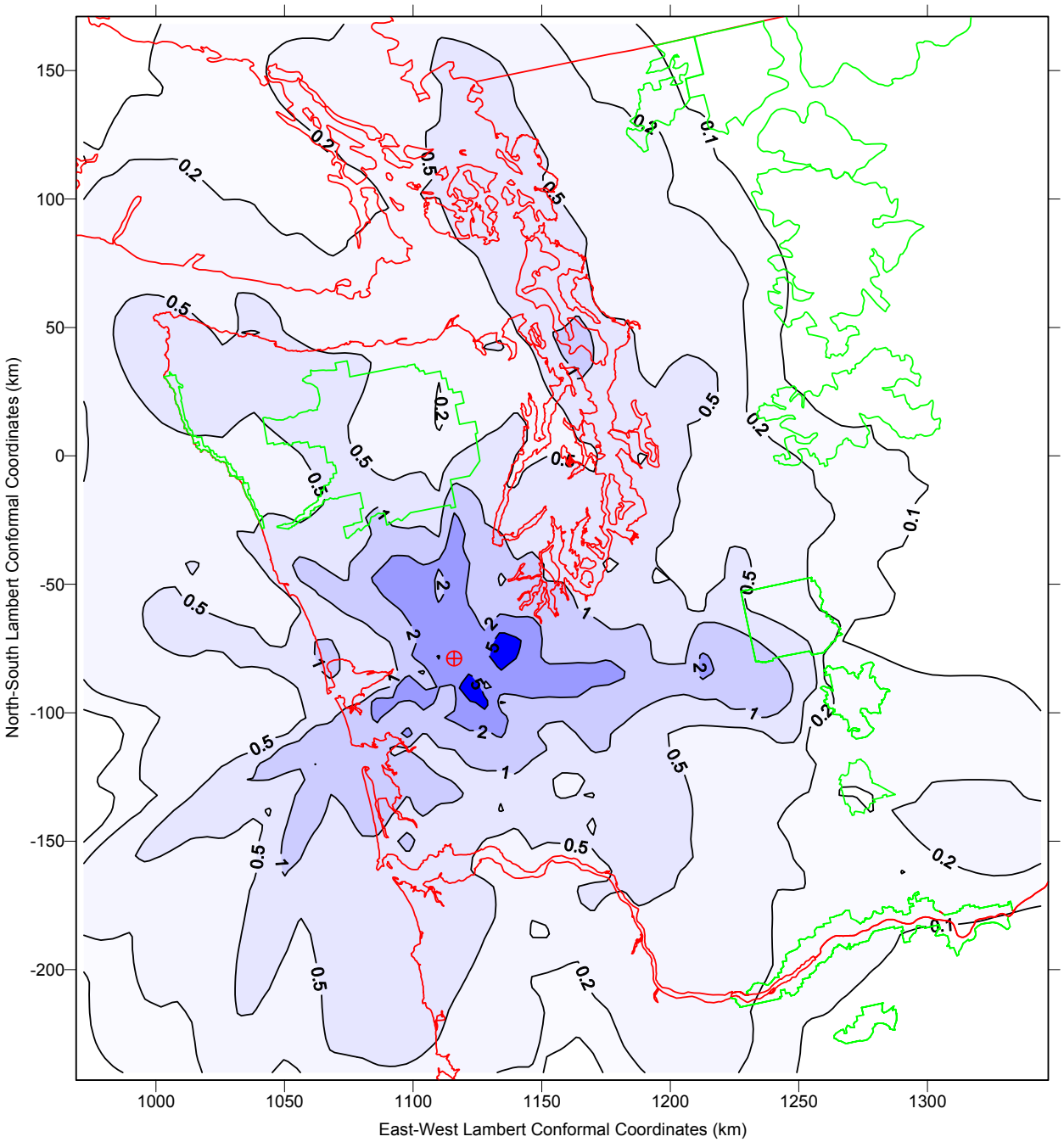


Figure 6.1-41

Twenty-Four Hour Maximum Extinction Coefficients (1/MM) from SCTP, September 1 to November 30, 1998

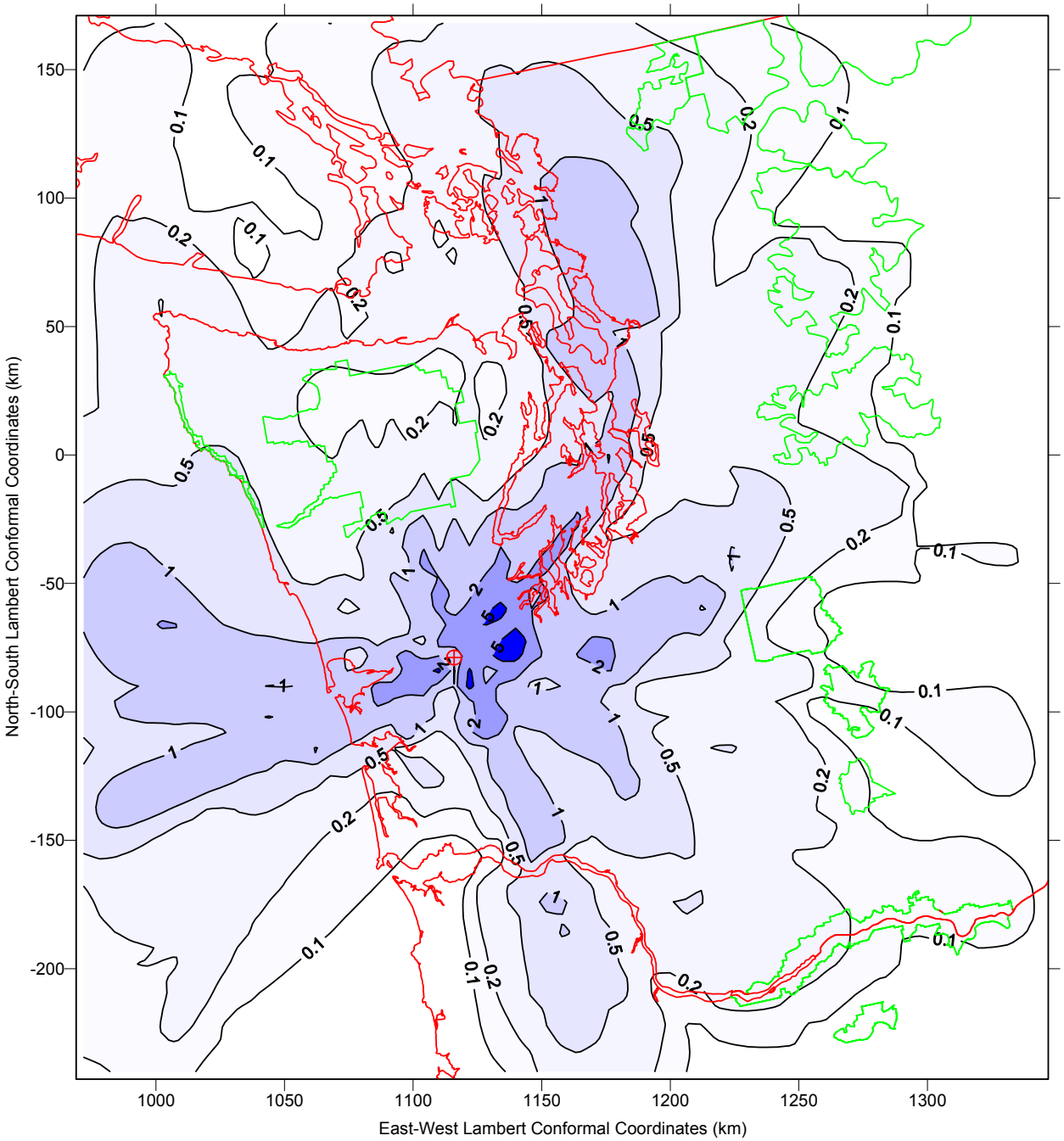


Figure 6.1-42

Twenty-Four Hour Maximum Extinction Coefficients (1/MM) from SCTP, December 1, 1998, to March 31, 1999

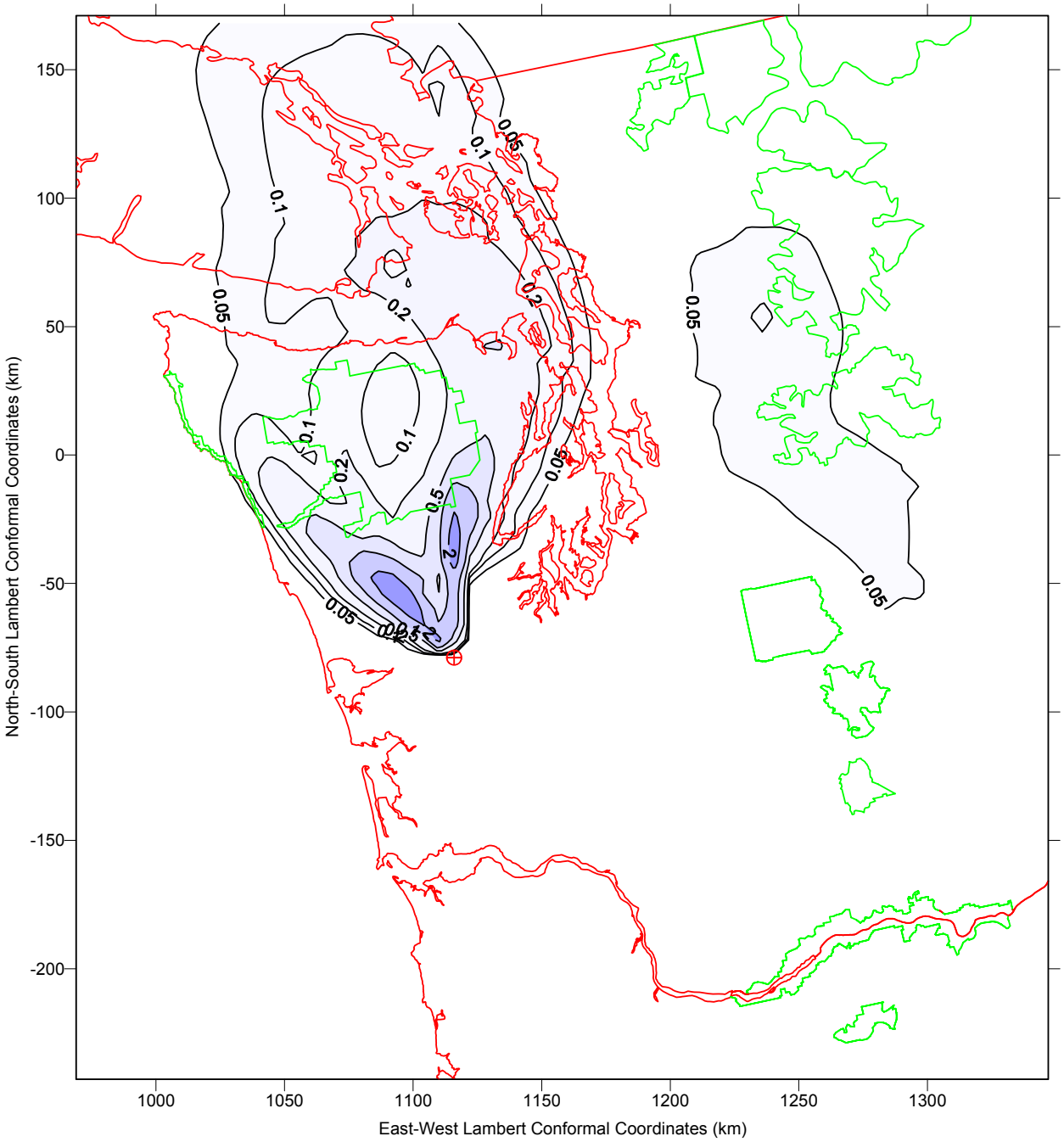


Figure 6.1-43

Twenty-Four Hour Maximum Extinction Coefficients (1/MM) from SCTP, October 29, 1998

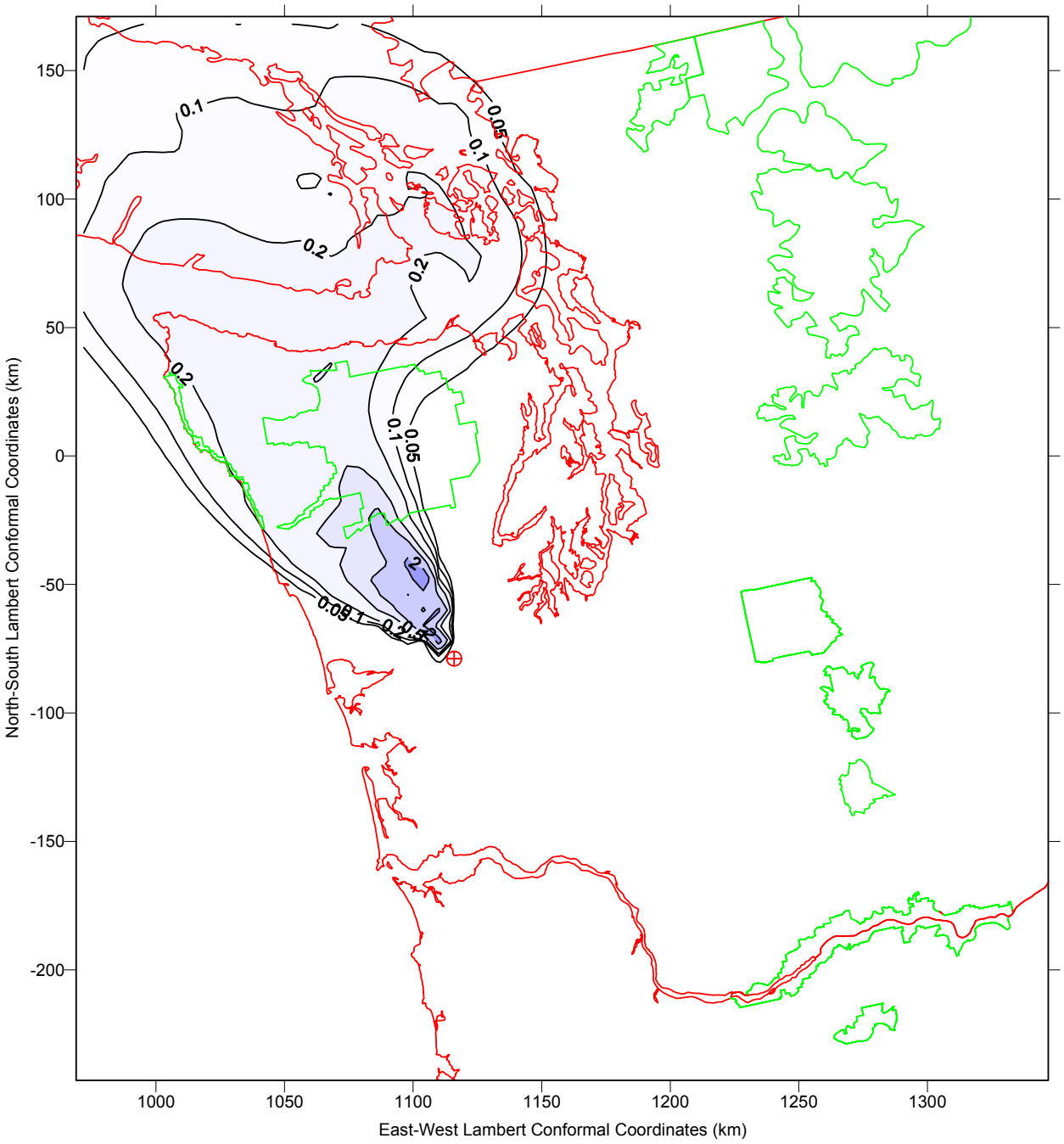


Figure 6.1-44

Twenty-Four Hour Extinction Coefficients (1/MM) from SCTP, October 30, 1998

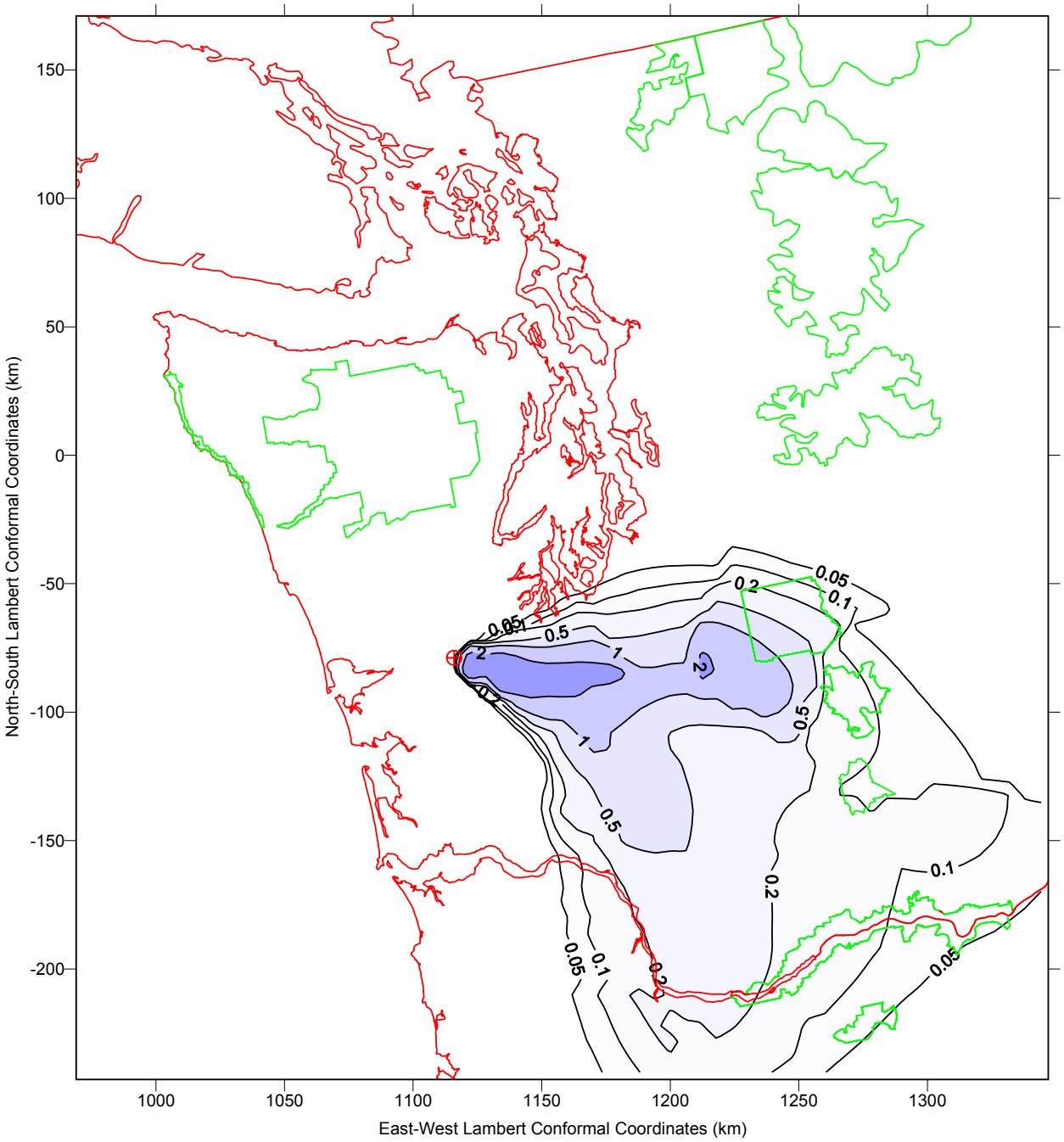


Figure 6.1-45

Twenty-Four Hour Extinction Coefficients (1/MM) from SCTP, September 24, 1998

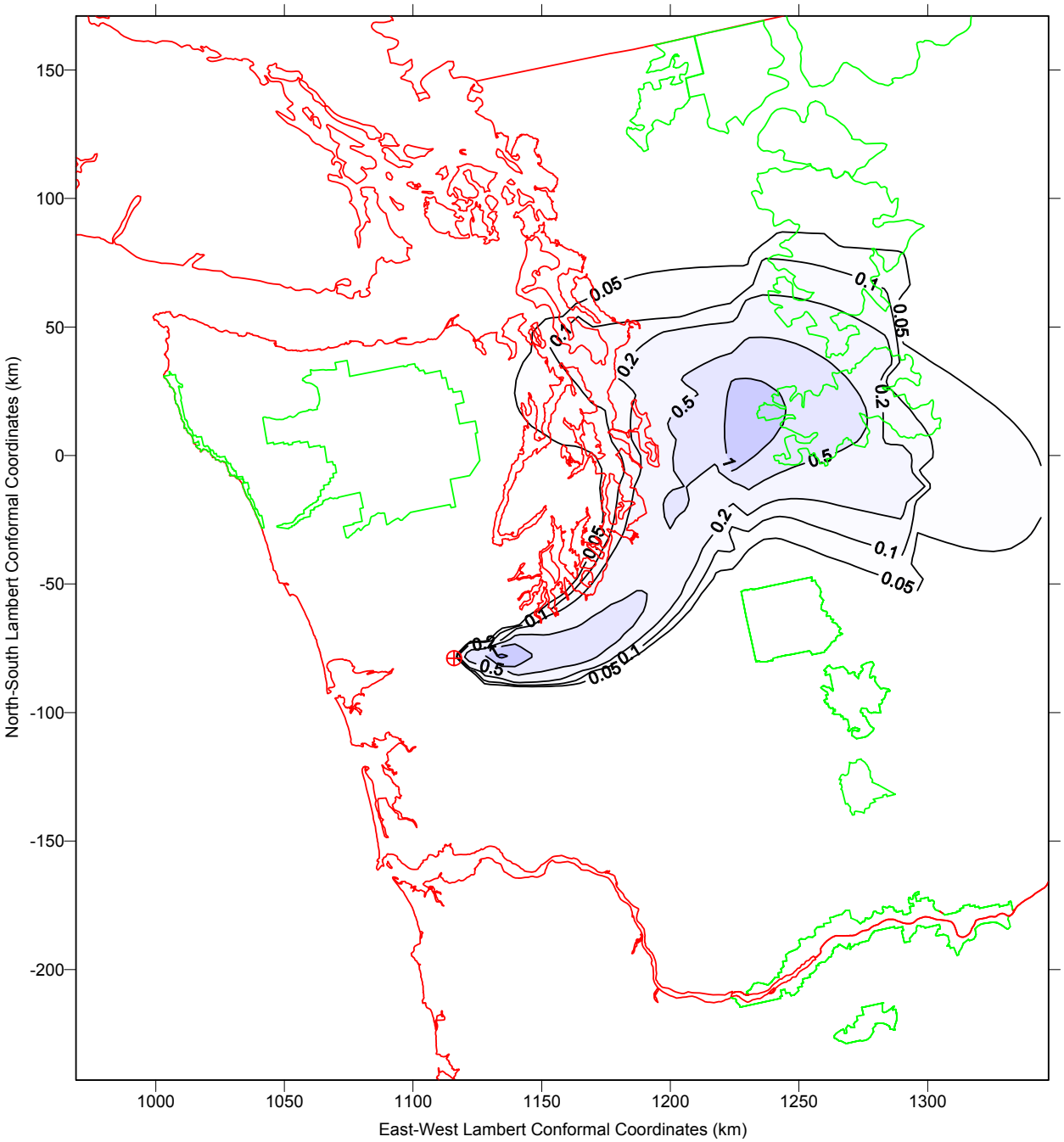


Figure 6.1-46

Twenty-Four Hour Extinction Coefficients (1/MM) from SCTP, May 8, 1998