Trinity Consultants
INCORPORATED

Post-It® Fax Note 7671	Date 11/18	# of pages ▶ 2
To Dolly Potter	From B. Birdsall	
Co./Dept. Solvay Minerals	Co. Trinity Consultants	
Phone #	Phone #	
Fax #	Fax #	

FAX

Date: **11/18/97 9:36 AM** Pages (including cover): **2**
To: **Ken Rairigh**
Company: **Wyoming DEQ/AQD**
Fax Number: **(307) 777-5616** Project Number:
From: **Brewster Birdsall**
Trinity fax (303) 607-9034 ♦ Call (303) 607-9600 if there are problems with transmission

☐ **Original to follow by mail** ☐ **Urgent** ☐ **Please copy for "copy to" below**

IMPORTANT: The accompanying message is intended only for the use of the individual or entity to which it is addressed and may contain information that is privileged, confidential and exempt from disclosure under applicable law. If you are not the intended recipient, you are hereby notified that any dissemination, distribution or copying or other use of this communication is strictly prohibited. If you have received this telecopy in error, please notify us by telephone immediately so that we can arrange for the retrieval of the original documents at no cost to you. Thank you.

Ken - [redacted]

According to your request yesterday, I am providing additional information regarding the modeling methodology applied to the November 4, 1997 NAAQS and PSD Increment Analysis for Solvay Minerals, Inc. (Solvay Soda Ash Joint Venture). Additional information regarding the method of selecting receptor terrain elevations was requested.

Terrain elevations for each receptor in the analysis are interpolated from data contained in USGS 7.5' DEM files. Each USGS 7.5' DEM file contains terrain elevations on a 30-meter grid spacing. Our analysis contains receptors that are located on 500-, 100-, and 25-meter grids. In order to determine receptor elevations from the raw USGS data, Trinity uses *BREEZE AIR SUITE (ISC3)* software to interpolate an elevation at each modeled receptor. Knowing the coordinates of the modeled receptor, the *BREEZE AIR* software applies an inverse-distance interpolation to compute a receptor elevation from the elevations of the four neighboring DEM data points. The interpolation scheme is shown for a 100-meter receptor grid in the figure and equation on the following page (from the *BREEZE AIR* users manual).

For your review, I have e-mailed to you the USGS 7.5' DEM files used in the analysis. These files were purchased from Micropath as shown in the November 4 letter. If you require further information, please contact me at (303) 607-9600.

Thanks.
Brewster

\\TCI-FTC\VOL2\p\1997\9781-032\fax07.doc

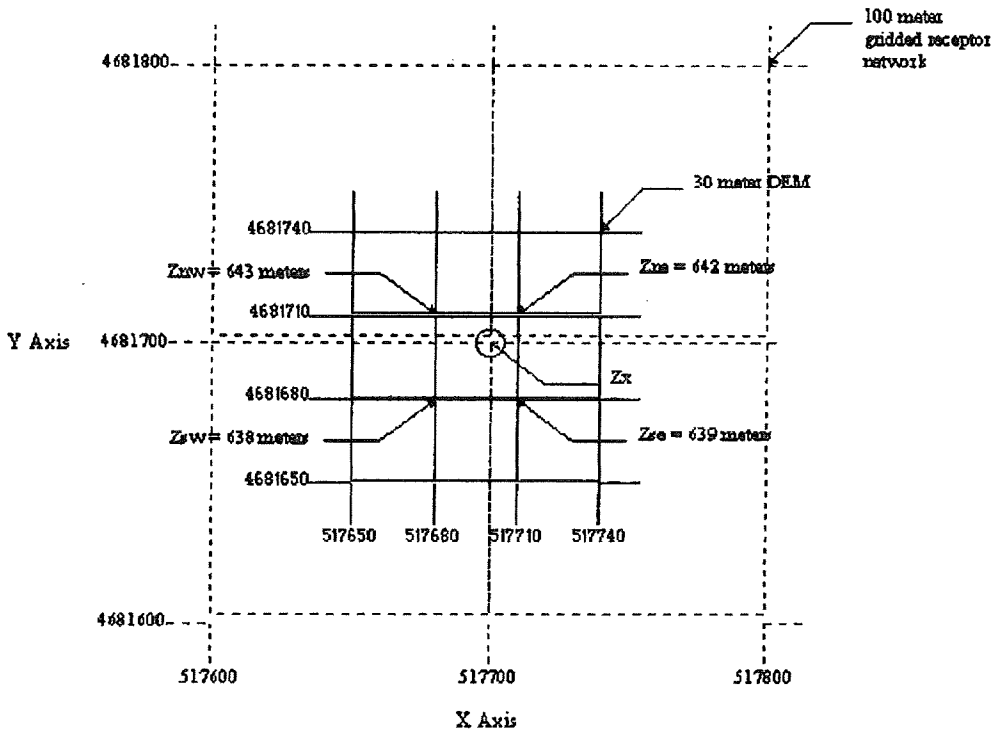
cc: Dolly Potter - Fax (307) 872-6510

1515 Arapahoe Street, Park Central Tower 1, Suite 1515, Denver, Colorado 80202 U.S.A.
(303) 607-9600 ♦ Offices nationwide ♦ www.trinityconsultants.com

[redacted]

Methods of Determining Terrain Elevation

BREEZE AIR ISC3 provides the following methods of determining terrain elevation:



Methods:

1. Interpolation (Inverse Distance): Zx = 640.8

Zx = ((Znw / Dnw) + (Zne / Dne) + (Zse / Dse) + (Zsw / Dsw)) / ((1 / Dnw) + (1 / Dne) + (1 / Dse) + (1 / Dsw))

where: Zx = interpolated elevation value
Znw-Zsw = neighboring data points
Dnw-Dsw = distances between receptor point and neighboring data points

2. Nearest: Zx = 642.0

NOTE: When Zx is equidistant from Znw, Zne, Zse, and Zsw, Zx is determined through interpolation.

3. Highest: Zx = 643.0

NOTE: If the x and y coordinates of Zx directly match the x and y coordinates of any data point, Zx is equal to the value of that data point regardless of which data method is chosen.