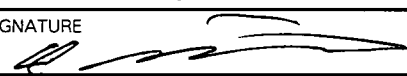


07-1384 ✓

Complete in accordance with instructions on reverse and forward copy:				Form Approved: OMB No. 0648-0025 Expires 12/31/2007			
TO: National Oceanic and Atmospheric Administration Office of Oceanic and Atmospheric Research 1315 East-West Highway SSMC-3 Room 11216 Silver Spring, MD 20910				NOAA FORM 17-4 U.S. DEPARTMENT OF COMMERCE (4-81) NAT'L OCEANIC AND ATMOSPHERIC ADM. INITIAL REPORT ON WEATHER MODIFICATION ACTIVITIES (P.L. 205, 92 ND , CONGRESS)			
1. PROJECT OR ACTIVITY DESIGNATION, IF ANY Alta/Snowbird, Utah				2. DATES OF PROJECT			
3. PURPOSE OF PROJECT OR ACTIVITY Increase snowpack for ski areas				a. DATE FIRST ACTUAL WEATHER MODIFICATION ACTIVITY IS TO BE UNDERTAKEN		10/15/2007	
				b. EXPECTED TERMINATION DATE OF WEATHER MODIFICATION ACTIVITIES		12/24/2007	
4. (a) SPONSOR				4. (b) OPERATOR			
NAME Onno Wieringa				NAME Don Griffith			
AFFILIATION Alta Ski Lifts Company		PHONE NUMBER (801) 359-1078		AFFILIATION North American Weather Consultants		PHONE NUMBER (801) 942-9005	
STREET ADDRESS PO Box 8007				STREET ADDRESS 8180 South Highland Drive, Suite B-2			
CITY Alta	STATE UT	ZIP CODE 84092	CITY Sandy		STATE UT	ZIP CODE 84093	
5. TARGET AND CONTROL AREAS (See Instructions)							
TARGET AREA				CONTROL AREA			
LOCATION Alta and Snowbird ski resorts		SIZE OF AREA 10 SQ.MI		LOCATION NA		SIZE OF AREA NA SQ.MI.	
6. DESCRIPTION OF WEATHER MODIFICATION APPARATUS, MODIFICATION AGENTS AND THEIR DISPERSAL RATES, THE TECHNIQUES EMPLOYED, ETC. (See Instructions) Four ground-based silver iodide generators will be installed. Each generator emits 12 grams per hour of silver iodide. Operational decisions will be made from NAWC offices in Sandy, Utah.							
7. LOG BOOKS: Enter name, affiliation, address, and telephone number of responsible individual from whom log books or other records may be obtained.							
NAME Don Griffith				THIS REPORT IS REQUIRED BY PUBLIC LAW 92-205; 85 STAT 735; 15 U.S.C. 330b. KNOWING AND WILLFUL VIOLATION OF ANY RULE ADOPTED UNDER THE AUTHORITY OF SECTION 2 OF PUBLIC LAW 92-205 SHALL SUBJECT THE PERSON VIOLATING SUCH RULE TO A FINE OF NOT MORE THAN \$10,000, UPON CONVICTION THEREOF.			
AFFILIATION North American Weather Consultants		PHONE NUMBER (801) 942-9005					
STREET ADDRESS 8180 South Highland Drive, Suite B-2							
CITY Sandy	STATE UT	ZIP CODE 84093					
8. SAFETY AND ENVIRONMENT							
<input type="checkbox"/> YES		<input checked="" type="checkbox"/> NO		Has an Environmental Impact Statement, Federal or State been filed? If yes, please furnish a copy as applicable.			
<input checked="" type="checkbox"/> YES		<input type="checkbox"/> NO		Have provisions been made to acquire the latest forecasts, advisories, warnings, etc. of the National Weather Service, Forest Service, or others when issued prior to and during operations? If yes, please specify on a separate sheet.			
<input checked="" type="checkbox"/> YES		<input type="checkbox"/> NO		Have any safety procedures (operational constraints, provisions for suspension of operations, monitoring methods, etc.) and any environmental guidelines (related to the possible effects of the operations) been included in the operational plans? If yes, please furnish copies or a description of the specific procedures and guidelines.			
9. OPTIONAL REMARKS (See Instructions. Use Separate Sheet.)							
NAME Don Griffith				CERTIFICATION: I certify that the above statements are true, complete and correct to the best of my knowledge and belief.			
AFFILIATION North American Weather Consultants				SIGNATURE 			
STREET ADDRESS 8180 South Highland Drive, Suite B-2				OFFICIAL TITLE President			
CITY Sandy	STATE UT	ZIP CODE 84093	DATE 10/08/2007	PHONE NUMBER (801) 942-9005			

INTERIM ACTIVITY REPORTS AND FINAL REPORT

NOAA FILE NUMBER

07-1384

This report is required by Public Law 92-205; 85 Stat. 735; 145 U.S.C. 330b. Knowing and willful violation of any rule adopted under the authority of Section 2 of Public Law 92-205 shall subject the person violating such rule to a fine of not more than \$10,000, upon conviction thereof.

INTERIM REPORT FINAL REPORT

Complete in accordance with instructions on reverse and forward one copy to:

REPORTING PERIOD

National Oceanic and Atmospheric Administration
Office of Oceanic and Atmospheric Research
1315 East-West Highway SSMC-3 Room 11216
Silver Spring, MD 20910

FROM 10/15/2007 TO 12/24/2007

MONTH	(a) NUMBER OF MODIFICATION DAYS	(b) NUMBER OF MODIFICATION DAYS PER MAJOR PURPOSE			(c) HOURS OF APPARATUS OPERATION BY TYPE		(d) TYPE AND AMOUNT OF AGENT USED					
		INCREASE PRECIPITATION	ALLEVIATE		OTHER	AIRBORNE	GROUND	SILVER IODIDE	CARBON DIOXIDE	UREA	SODIUM CHLORIDE	OTHER
			HAIL	FOG								
JANUARY												
FEBRUARY												
MARCH												
APRIL												
MAY												
JUNE												
JULY												
AUGUST												
SEPTEMBER												
OCTOBER	4	4					135	1,620				
NOVEMBER	7	7					63	756				
DECEMBER	12	12					192	2,304				
TOTAL	23	23	0	0	0	0	390	4,680	0	0	0	0
TOTALS FOR FINAL REPORT	23	23	0	0	0	0	390	4,680	0	0	0	0

DATE ON WHICH FINAL WEATHER MODIFICATION ACTIVITY OCCURRED (For Final Report only.)

CERTIFICATION: I certify that all statements in this report on this weather modification project are complete and correct to the best of my knowledge and are made in good faith.

NAME OF REPORTING PERSON

Don Griffith

AFFILIATION North American Weather Consultants

SIGNATURE

STREET ADDRESS 8180 South Highland Drive Suite B-2

OFFICIAL TITLE

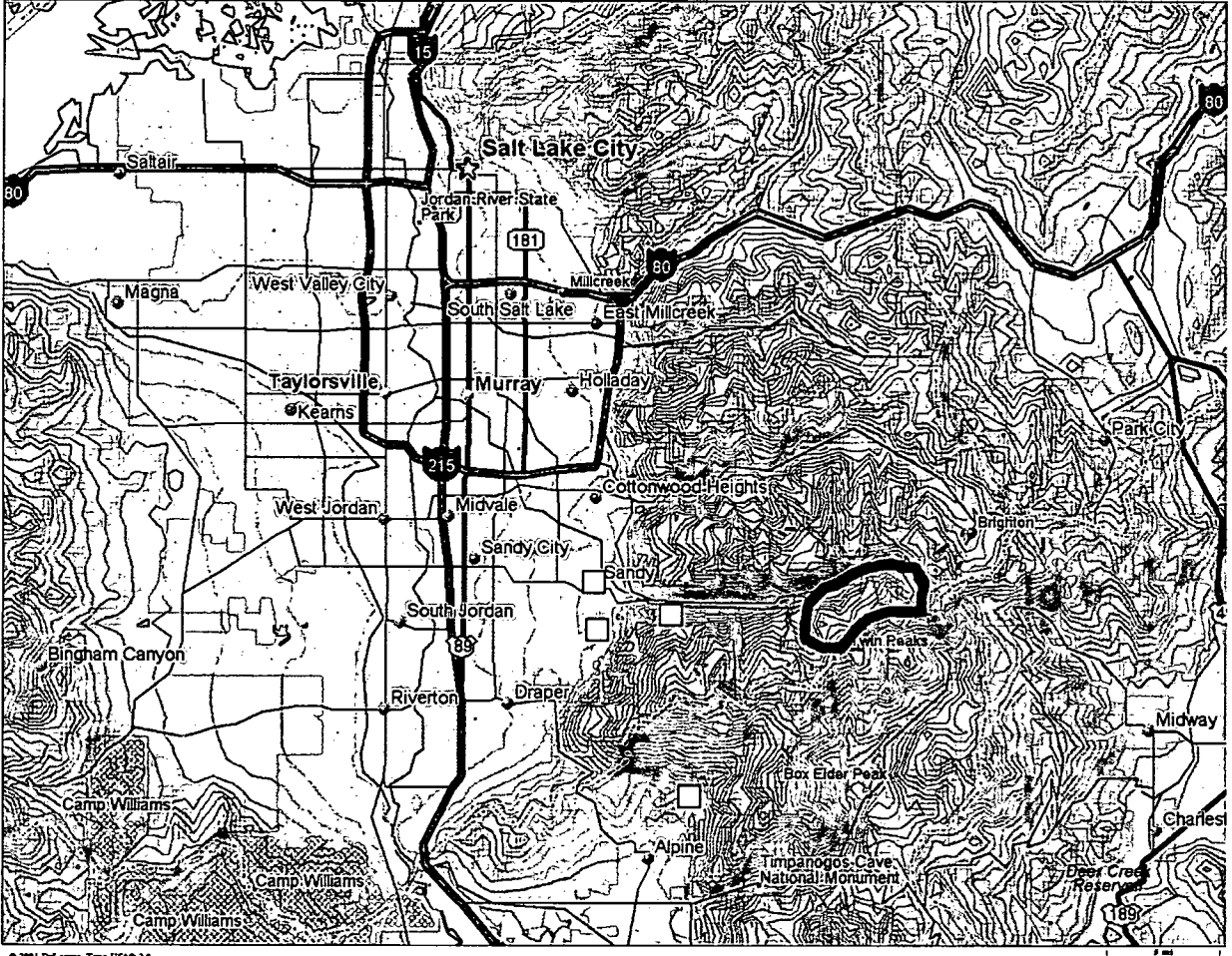
President

CITY Sandy

STATE UT

ZIP CODE 84093

DATE 01/03/2008



© 2001 DeLorme, Topo USA® 2.0
 Scale: 1 : 225,000. Spheroid: GRS 80. Datum: WGS84. Map Projection: UTM. Magnetic Declination: 13.3°E

Alta and Snowbird target area (black outline) and generator sites (yellow squares)

Utah Winter Cloud Seeding Suspension Criteria

Certain situations require suspension criteria to minimize either an actual or apparent contribution of seeding to a potentially hazardous situation. The ability to forecast and avoid hazardous conditions is very important in limiting liability associated with weather modification and to maintain a desirable public image.

There are three hazardous situations around which suspension criteria have been developed. These are:

1. Excess snowpack accumulation
2. Rain-induced winter flooding
3. Severe weather

1. Excess Snowpack Accumulation

Snowpack begins to accumulate in the mountainous areas of Utah in November and continues through April. The heaviest average accumulations normally occur from January through March. Excessive snowpack becomes a potential hazard from snowmelt. The Natural Resources Conservation Service (NRCS) maintains a network of high elevation snow pack measurement sites in the State of Utah. This network is known as SNOTEL. SNOTEL observations are routinely available at several times per day. The following set of criteria, based upon observations from these SNOTEL site observations, has been developed as a guide for suspension of operations.

- a. 200 % of average on January 1 st
- b. 180 % of average on February 1 st
- c. 160 % of average on March 1st
- d. 150 % of average on April 1st

These suspensions will be determined on a geographical division or sub-division basis. The NRCS has divided the State of Utah into 13 such divisions as follows: Bear River, Weber-Ogden Rivers, Provo River-Utah Lake-Jordan River, Tooele Valley-Vernon Creek, Green River, Duchesne River, Price-San Rafael, Dirty Devil, South Eastern Utah, Sevier River, Beaver River, Escalante River, and Virgin River. Since SNOTEL observations are available on a daily basis, suspensions (and cancellation of suspensions) can be made on a daily basis using linear interpolation of the first of month criteria.

Streamflow forecasts, reservoir storage levels, soil moisture content and amounts of precipitation in prior seasons are other factors which need to be considered when suspending seeding operations.

2. Rain-induced Winter Floods

The potential for wintertime flooding from rainfall on low elevation snowpack is fairly high in some of the more southern target areas during the late winter/early spring period. Every precaution must be taken to insure accurate forecasting and timely suspension of operations during these potential flooding situations. The objective of suspension under these conditions is to eliminate both the real and/or perceived impact of weather modification when any increase in precipitation has the potential of creating a flood hazard.

3. Severe Weather

During periods of hazardous weather phenomena associated with both winter orographic and convective precipitation systems it is sometimes necessary or advisable for the National Weather Service (NWS) to issue special weather bulletins advising the public of the weather phenomena. Each phenomenon is described in terms of criteria used by the NWS in issuing special weather bulletins. Those of concern in the conduct of winter cloud seeding programs include:

- **Snow Advisory** - This is issued by the NWS when four to twelve inches of snow in 12 hours or six to eighteen inches in 24 hours in mountainous regions above 7000 feet. Lower threshold criteria (in terms of the number of inches of snow) are issued for valleys and mountain valleys below 7000 feet.
- **Heavy Snow Warning** - This is issued by the NWS when it expects snow accumulations of twelve inches or more per 12-hour period or eighteen inches or more per 24-hour period in mountainous areas above 7000 feet. Lower criteria are used for valleys and mountain valleys below 7000 feet.
- **Winter Storm Warning** - This is issued by the NWS when it expects heavy snow warning criteria to be met along with strong winds/wind chill or freezing precipitation.
- **Flash Flood Warnings** - This is issued by the NWS when flash flooding is imminent or in progress. In the Inter-mountain West these warnings are generally issued relative to, but not limited to, fall or spring convective systems.

Seeding operations may be suspended whenever the NWS issues a weather warning for or adjacent to any target area. Since the objective of the cloud seeding program is to increase winter snowfall in the mountainous areas of the state, operations will typically not be suspended

when Heavy Snow or Winter Storm Warnings are issued unless there are special considerations (e.g., a heavy storm that impacts Christmas Eve travel).

Flash Flood Warnings are usually issued when intense convective activity causing heavy rainfall is expected. Although the probability of this situation occurring during our operational seeding periods is low, the potential does exist over southern sections of the state during late March and early April. The type of storm that may cause problems is one that has the potential of producing 1-2 inches (or greater) of rainfall in approximately a 24 hour period with high freezing levels (e.g. > 8,000 feet MSL). Seeding operations will be suspended for the duration of the warning in the affected areas.

*North American
Weather Consultants, Inc.*

8180 South Highland Drive, Suite B-2
Sandy, Utah 84093
Telephone 801-942-9005
Facsimile 801-942-9007
E-Mail nawc@nawcinc.com

Air Quality, Applied Meteorology, Meteorological Research, Weather Modification

January 3, 2008

Karen Williams
NOAA/Office of Oceanic and Atmospheric Research
1315 East-West Highway, Room 11216
Silver Spring, MD 20910

Dear Ms. Williams:


Enclosed are interim reports for the following seeding programs:

Alta/Snowbird, Utah	07-1384
Central/Southern Utah	07-1383
Boise River, Idaho	07-1382
Gunnison, Colorado	08-1395
Northern Utah	08-1396
Western Uintas, Utah	08-1397
High Uintas, Utah	08-1398

We also submitted an initial report (in late November) for the Kings River program in California, which officially began on December 1st. We currently do not have an NOAA file number for this program. There have not been any seeding operations for the Kings River program through December 31st of 2007, so there is no interim report included here for that program.

Please contact us if you have any questions.

Sincerely,


Don A. Griffith
President

*North American
Weather Consultants, Inc.*

Air Quality, Applied Meteorology, Meteorological Research, Weather Modification

8180 South Highland Drive, Suite B-2
Sandy, Utah 84093
Telephone 801-942-9005
Facsimile 801-942-9007
E-Mail nawc@nawcinc.com

*rec'd 10/12/07
mailed 10/12/07*

October 8, 2007

Karen Williams
NOAA/Office of Oceanic and Atmospheric Research
1315 East-West Highway, Room 11216
Silver Spring, MD 20910

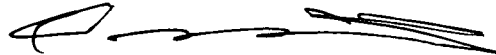
Dear Ms. Williams:

Enclosed are initial reports for the following cloud seeding programs:

Alta/Snowbird, Utah
Central and Southern Utah
Boise River, Idaho

Please contact us if you have any questions.

Sincerely,



Don A. Griffith
President



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
OFFICE OF OCEANIC AND ATMOSPHERIC RESEARCH
Office of Weather and Air Quality
1315 East-West Highway
Silver Spring, MD 20910

October 12, 2007

Mr. Don A. Griffith
President
North American Weather Consultants, Inc.
8180 South Highland Drive, Suite B-2
Sandy, Utah 84093

Dear Mr. Griffith:

Thank you for your Initial Reports for the weather modification activities for the North American Weather Consultants, Inc. These projects were assigned the following NOAA File Numbers:

<u>Project Name:</u>	<u>NOAA File Number:</u>
Boise River, Idaho	07-1382
Southern/Central Utah	07-1383
Alta/Snowbird, Utah	07-1384

As a reminder, please submit a Final Report within 45 days after the project has terminated. This is mandated under Public Law 92-205.

Sincerely,

Ms. Karen Williams, Manager
Weather Modification Activities
Reporting Program

