Complete in accordance with instructions on reverse and forward copy:

TO: National Oceanic and Atmospheric Administration
Office of Oceanic and Atmospheric Research
1315 East-West Highway SSMC-3 Room 11554
Silver Spring, MD 20910

Form Approved: OMB No. 0648-0025 Expires 10/31/2001

NOAA FORM 17-4 (4-81)

U.S. DEPARTMENT OF COMMERCE
NAT'L OCEANIC AND ATMOSPHERIC ADM.

# INITIAL REPORT ON WEATHER MODIFICATION ACTIVITIES (P.L. 205, 92ND. CONGRESS)

**1. PROJECT OR ACTIVITY DESIGNATION, IF ANY**
West Texas Weather Modification Association

**2. DATES OF PROJECT**

a. DATE FIRST ACTUAL WEATHER MODIFICATION ACTIVITY IS TO BE UNDERTAKEN: 3/15/2020

b. EXPECTED TERMINATION DATE OF WEATHER MODIFICATION ACTIVITIES: 10/31/2020

**3. PURPOSE OF PROJECT OR ACTIVITY**
Rain Enhancement

**4. (a) SPONSOR**

| NAME | | | |
|---|---|---|---|
| Craig Funke | | | |
| AFFILIATION | | PHONE NUMBER | |
| Manager, WTWMA | | 325-949-1950 | |
| STREET ADDRESS | | | |
| 8696 Hangar Road | | | |
| CITY | STATE | ZIP CODE | |
| San Angelo | TX | 76904 | |

**4. (b) OPERATOR**

| NAME | | | |
|---|---|---|---|
| Jonathan Jennings | | | |
| AFFILIATION | | PHONE NUMBER | |
| Meteorologist, WTWMA | | 325-949-1950 | |
| STREET ADDRESS | | | |
| 8696 Hangar Road | | | |
| CITY | STATE | ZIP CODE | |
| San Angelo | TX | 76904 | |

**5. TARGET AND CONTROL AREAS (See Instructions)**

| TARGET AREA | | CONTROL AREA | |
|---|---|---|---|
| LOCATION | SIZE OF AREA | LOCATION | SIZE OF AREA |
| West Texas (San Angelo to Midland) | 9900 SQ.MI | West Texas (North of I-20, south of I-10) | 9900 SQ.MI. |

**6. DESCRIPTION OF WEATHER MODIFICATION APPARATUS, MODIFICATION AGENTS AND THEIR DISPERSAL RATES, THE TECHNIQUES EMPLOYED, ETC.** *(See Instructions)*

The WTWMA utilizes single engine aircraft equipped with flare racks to enhance rainfall in 6 1/2 counties in West Texas (Sutton, Crockett, Reagan, Irion, Tom Green, Sterling and Schleicher Counties). Flares include 40g glaciogenic (5.5g AgI) and 1kg hygroscopic flares (CaCl2). Operations are conducted by a state licensed meteorologist (licensed by TDLR) using radar provided by Weather Decisions Technologies via the NWS. Aircraft are tracked via telemetry on the TITAN radar display. Dosaging can range from 1 flare per cloud upwards to 10 flares per cloud, depending on the size and characteristics of the cloud. Any operations will be suspended under flood or tornado warning or upon request by the TDLR and/or management of the WTWMA and associated counties.

**7. LOG BOOKS:** *Enter name, affiliation, address, and telephone number of responsible individual from whom log books or other records may be obtained.*

| NAME | | |
|---|---|---|
| Jonathan Jennings | | |
| AFFILIATION | PHONE NUMBER | |
| Meteorologist, WTWMA | 325-949-1950 | |
| STREET ADDRESS | | |
| 8696 Hangar Road | | |
| CITY | STATE | ZIP CODE |
| San Angelo | TX | 76904 |

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.

**8. SAFETY AND ENVIRONMENT**

| | | |
|---|---|---|
| YES | X NO | Has an Environmental Impact Statement, Federal or State been filed? If yes, please furnish a copy as applicable. |
| X YES | 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. |
| X YES | 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 | | | | |
|---|---|---|---|---|
| Jonathan Jennings | | | **CERTIFICATION:** I certify that the above statements are true, complete and correct to the best of my knowledge and belief. | |
| AFFILIATION | | | SIGNATURE | |
| WTWMA | | | | |
| STREET ADDRESS | | | OFFICIAL TITLE | |
| 8696 Hangar Road | | | Project Meteorologist | |
| CITY | STATE | ZIP CODE | DATE | PHONE NUMBER |
| San Angelo | TX | 76904 | 03/03/2020 | 3259491950 |

# INSTRUCTIONS FOR INITIAL REPORT ON WEATHER MODIFICATION ACTIVITIES

One completed copy of this form is to be received 10 days* or more prior to actual modification activities. A NOAA file number will be assigned by the Administrator after receipt of the initial report for each project or activity.

A supplemental report in a letter form referring to the appropriate NOAA file number must be made to the Administrator if the "Initial Report" is found to contain any material inaccuracies, misstatements, and omissions, or if there are changes in plans for the project or activity.

*For exceptions, see Sections 908.4(b) and (c), Part 908 of Title 15, Code of Federal Regulations.

Item 1. Enter designation, if any, used by operator for the project or activity.

Item 2. Enter: (a) Date first actual weather modification activity is to be undertaken;
(b) Date on which final weather modification activity is expected to occur.

Item 3. Enter the purpose of the project or activity: e.g., rainfall increase, hail suppression, cold fog dispersal, etc.

Item 4. Enter: (a) Name, phone number, affiliation, and address of the primary person for whom the project is to be performed (sponsor).

(b) Name, phone number , affiliation, and address of the person primarily responsible for carrying out the project (operator).

Item 5. A map should be attached showing size and location of target area, control area, coded number and location of each item of ground-based weather modification apparatus and coded number and location of key raingages, radars, or other precipitation measuring devices. Also show location of airport for airborne operations.

Item 6. Describe the weather modification apparatus, modification agents, and the techniques to be used. This would include type of ground or airborne apparatus to be used, type of modification material to be dispensed, rate of dispensing material in grams per hour or other appropriate units, type of precipitation gages to be used in target and control areas, and any other pertinent information such as type of radars, type of aircraft to be used, techniques to be employed, (e.g., cloud base seeding at 10,000 feet msl).

Item 7. List name, phone number , affiliation, and address of the responsible individual from whom log books or other records may be obtained.

Item 8. Provide applicable answers to questions as indicated.

Item 9. This item is to permit the reporting person to include any information not covered by items 1 through 8 but which he feels is significant or of interest. It is also to be used to include any information not covered elsewhere that the Administrator may request.

# INFORMATION PROVIDED UNDER THE PROVISIONS OF THE PAPERWORK REDUCTION ACT OF 1995

The Paperwork Reduction Act of 1995 requires that individuals or organizations be provided with the following information if they provide information on paper forms which are collected by the Federal Government. (This includes reports required of weather modification activities.)

1. Public Law 92-205, enacted December 18, 1971 (amended by Public Law 94-490, Section 6(b), October 15, 1976) requires that all non-federal weather modification activities in the United States and its territories be reported to the Secretary of Commerce. The National Oceanic and Atmospheric Administration has implemented the Act and the current reporting requirements are published in the Catalog of Federal Regulations (15 CFR 908).

2. The intent of the program is to increase expertise in the field of weather modification, to allow scientists and other concerned persons to have access to information on current and past efforts at weather modification, to help avoid unneeded and wasteful duplications, to aid in preventing territorial overlapping of weather modification operations, to provide data to assess possible harmful or dangerous activities, and to furnish information to check both desirable and undesirable atmospheric changes against records of weather modification efforts. To meet this objective, information is collected on the location and size of the target area, names and addresses OF sponsors and operators, beginning and ending dates of the project, specific purpose, description of apparatus and seeding agents to be used, number of days of operations, number of hours of operations of each type of weather modification apparatus, and total amount of seeding agent used.

3. Public reporting burden for this collection of information is estimated to average 40 hours for reporting and 200 hours for record keeping, based on one-half hour per response on Form 17-4 and one-half hour per response on Form 17-4A, and five hours per record keeper. It is estimated that the time per response is approximately the same across all respondents. Send comments regarding this burden estimate or any other aspect of this data collection, including suggestions for reducing this burden to: Ms. Karen King, DOC/NOAA/OAR, 1315 East West Highway, Silver Spring, MD 20910.

4. Reporting of this information under Public Law 92-205, enacted December 18, 1971 (amended by Public Law 94-490, Section 6(b), October 15, 1976) is <u>mandatory</u>.

5. Confidentiality is not a requirement for this reporting; no sensitive information is required.

6. Notwithstanding any other provision of the law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with, a collection of information subject to the requirements of the Paperwork Reduction Act, unless that collection of information displays a currently valid OMB Control Number.

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September 1, 2000
Expires 10/31/2001

**6. Description of Weather Modification Apparatus, Modification Agents and Their Disposal Rates:**

The WTWMA utilizes singe engine aircraft equipped with flare racks to enhance rainfall in 6 ½ counties in West Texas (Sutton, Schleicher, Crockett, Reagan, Sterling, Irion, western half of Tom Green). Flares include 40g glaciogenic flares (5.5g silver iodide) and 1 kilogram hygroscopic flares (made of mainly calcium chloride). Operations are conducted by a state licensing meteorologist (licensed by the Texas Department of Licensing and Regulation) using radar provided by Weather Decisions Technologies via the National Weather Service. Aircraft are tracked via telemetry on radar screen. Dosaging can range from 1 flare per cloud upwards to 10 flares per cloud, depending on the size of cloud.

**8. Safety and Environment**

The West Texas Weather Modification Association continues to strengthen its relation with the National Weather Service. The project meteorologist will monitor weather watched issued by the Storm Prediction Center and all warning, advisories and short term forecasts issued by the National Weather Service via weather radio, television and internet websites. The meteorologist is also, at times, in contact with the NWS via telephone, social media or text message.

The WTWMA has also been using new radar software called the GR2Analyst. This product provides live radar, watches, warnings and real time weather reports on the radar screen. This product has also been used for aircraft safety especially with the viewing of vertical updrafts which can at times skew ahead or behind of a storm. This has been utilized as a new tool during seeding operations.

Furthermore, all aircraft are equipped with a 406 Mhz emergency beacon. This will alert a Rescue Coordination Center in the even to a distress message being sent out from our aircraft. It will allow Search and Rescue (SAR) forces to locate the aircraft in a timely manner.