



Software Branch (W/OPS23)
NWW User Interface (NWW-EI)
NWW EUC User Manual

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NWW EUC User Manual

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1 Introduction

1.1 Purpose

The NOAA Weather Wire Service (NWWS) is a service designed to aggregate, process and disseminates text messages to NWWS users, state emergency management centers and commercial users. The NWWS is one of the most important means of disseminating weather messages.

The purpose of the replacement NWWS service is to provide a technology refresh and, most importantly, to reduce the operating costs, by combining the NWWS satellite broadcast with the NWS Satellite Broadcast Network (SBN).

2 System Description

2.1 System Overview

The NWW End User Client (EUC) is a cross-platform application that provides the ability to receive streams from two of the NWS Weather Wire data sources:

- Satellite Broadcast Network
- NOAA Weather Wire Open Interface

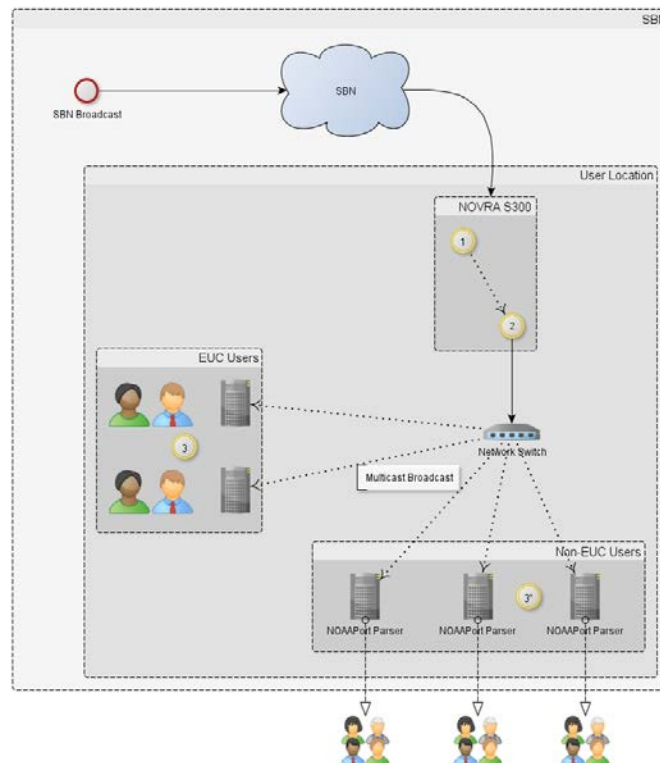


Figure 1 - EUC SBN System Architecture

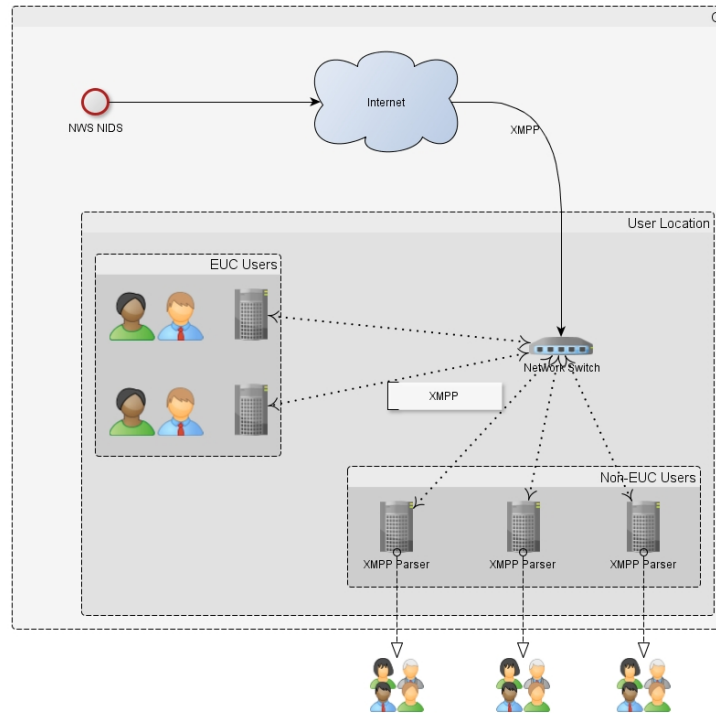


Figure 2 - EUC OI System Architecture

The streams provide NOAA Weather Wire end users with timely receipt of WMO products generated by the NWS Weather Forecast Offices and National Centers.

2.1.1 Provided Functionality

The functionality within the NWW EUC assists Emergency Managers, SBN/OI Recipients, and Weather Enthusiasts with WMO product ingest and archiving abilities. The following are the core functionalities:

- Ingest multicast WMO stream from the NWS DVB-S2 satellite receiver
- Ingest NWS WMO text products via XMPP
- Store (archive) all ingested WMO products for a user configurable period of up to 60 days
- Display archived WMO products based on the following filters:
 - Message Type
 - Originator
- EMWIN support

2.1.2 Host Specification

2.1.2.1 Operating Systems

- Fedora 18
- Windows 7

2.1.2.2 *Disk Space*

The EUC will maintain 60 days of ingested products based on the user selected filters.

Site Location	Disk Space Requirements
All	
Single Site	
Southern Region	
Western Region	
Eastern Region	
Central Region	
Pacific Region	

2.1.2.3 *Memory / Process*

Minimum Memory Requirement: 2 GB

Minimum Processor Requirement:

2.2 System Interfaces

The NWW EUC is capable of receiving the NOAA Weather Wire data stream from the two independent sources either in a singular or dual configuration. Both interfaces are monitored with visual status being provided within the EUC monitoring view.

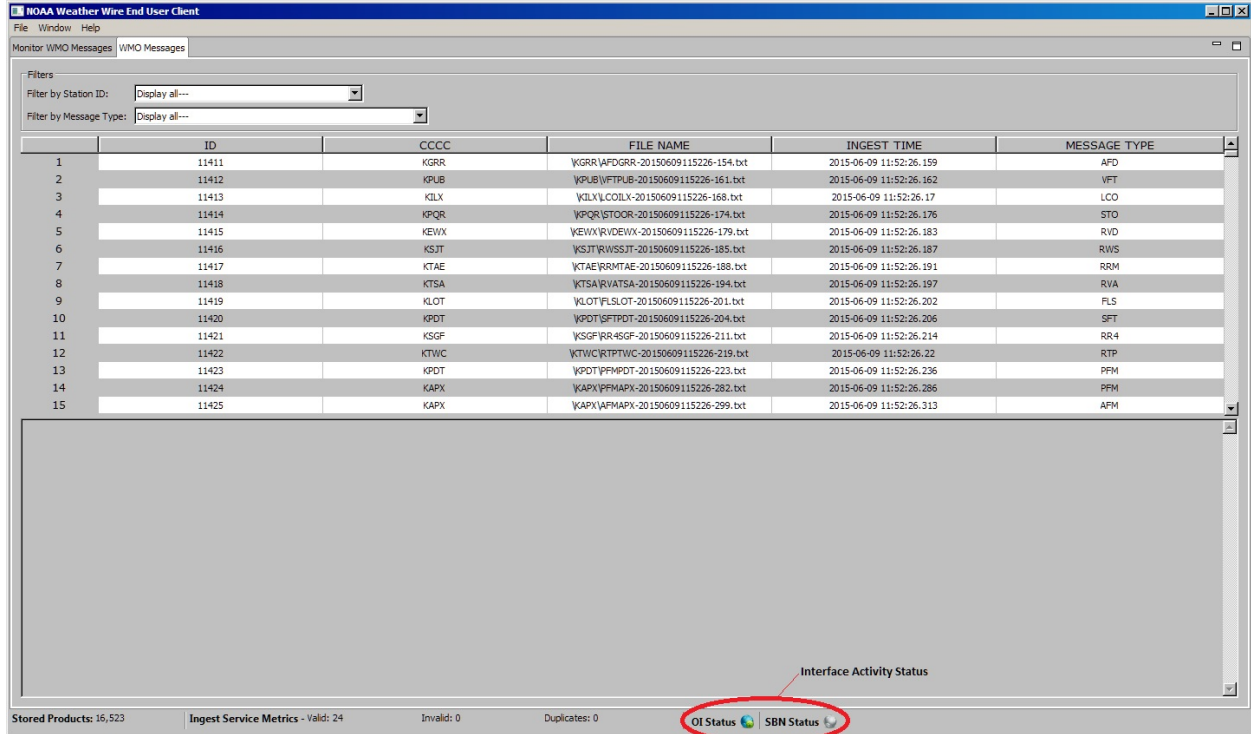





Figure 3 - Interface Activity Status

Status	Icon	Description
Active		Connected interface that is currently processing a WMO stream
Standby		Connected interface that has not received a WMO product within 5 or more minutes (automatic reconnected initiated every 3 minutes)
Inactive		Disconnected interface

The EUC will attempt several automatic reconnection attempts to provide safeguards against extended outages due to network or server issues.

2.2.1 Satellite Broadcast Network

The downlink of the NWW SBN feed provides a multicast data stream of WMO products that is regenerated from a NOVRA S300 Satellite Data Receiver. The S300 is a low cost, compact and robust data receiver that receives a DVB-S or DVB-S2 satellite signal and passes the IP or MPEG data onto your LAN. It is perfectly suited for consumer or small-medium enterprise use, delivering IP-based applications over satellite such as IPTV content delivery, weather imaging and data, distance education, digital signage, file distribution, and internet over satellite to a single computer or to a network of computers.

2.2.2 NOAA Weather Wire Open Interface

NWWS-OI provides public access to NWWS data through a simple to use web interface and RSS/ATOM feed subscriptions. The NWWS-OI deployment will contain WMO text products via RSS/ATOM subscription through the www.weather.gov URL.

3 Setup

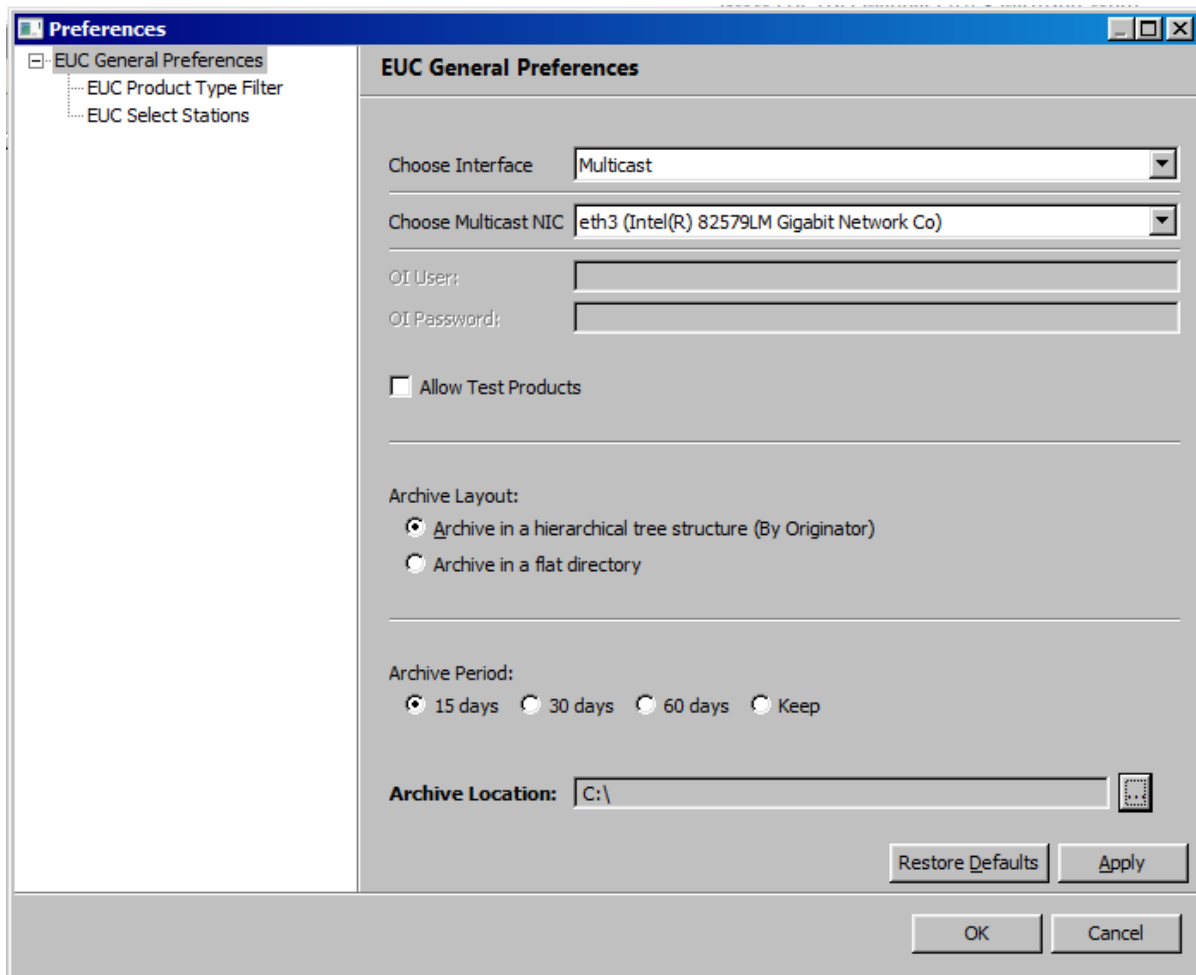
3.1 Installation

1. Unzip the provided NWW Client package that matches your system configuration into the desired directory:
 - a. `nww-euc-<version>.win32.win32.x86.zip`: 32-Bit Windows
 - b. `nww-euc-<version>.win32.win32.x86_64.zip`: 64-Bit Windows
2. Open the “nww-euc” directory and execute the file name “***nww-euc.exe***” by either double-clicking or running it from the operating system command line interface.

3.2 Configuration

3.2.1 Interface Type.

The NWW EUC is designed to provide users with the ability to segregate the SBN or OI traffic into individual subnets. For the EUC to operate properly the application must be provided with the correct network interface value for both SBN and OI connections.



1. Click Window | Preferences | EUC General Preferences
2. On the Interface Type preference, select the Multicast or the Open Interface option for a single feed or the Dual option to consume products from both interfaces simultaneously. Additional settings needed by each interface will be enabled once an option is selected. For example: If the Multicast option is selected, the Multicast NIC combo box containing the available NIC cards for the system will be enabled. The multicast NIC preference allows the user to choose what NIC card used to establish the connection with the NWW SBN. There is no default value for this preference; a card must be selected for a successful connection. If Dual mode is selected, both the multicast NIC combo box and the Open Interface username/Password boxes will be enabled.

3. Indicate whether you would like to allow test products to be displayed / archived by checking the checkbox.
4. Click Apply.

3.2.2 Archive Layout.

The Archive Layout provides two options for archiving the messages. The hierarchical tree structure is the default option and archives messages according to message originator. The flat directory option is provided primarily for EMWIN support.

1. Select the Archive Layout preference that will be used to archive the WMO messages.
2. Click Apply.

3.2.3 Archive Period.

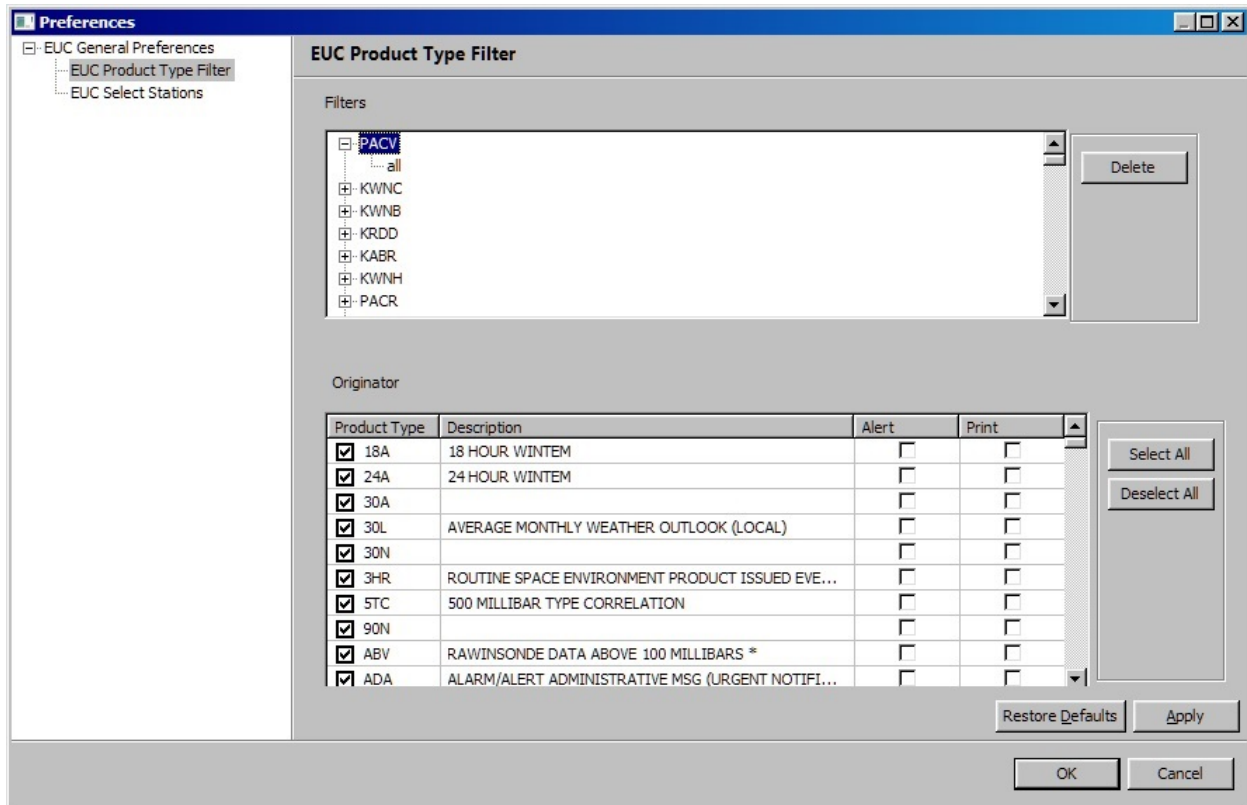
The Archive Period configuration determines how long messages are archived in the system. The default value is 60 days. Once messages are older than this setting, they are removed from the Database and the file system. The cleaning task requires that new messages are not being ingested at the time it runs. It will be cancelled /rescheduled if a new message is received. If messages need to be saved longer than 60 days, the *keep* option should be selected. Keep in mind that this may result in filling up the hard drive eventually unless the products are not manually moved or deleted.

1. Select the archive period.
2. Click Apply.

3.2.4 Archive Location.

The Archive location configuration provides an option to select an alternative directory for storing products. It will default to the EUC installation directory but it can be changed by clicking the button to the right of the *Archive Location* section.

3.2.5 Product Category Selection



This preference provides the user with the ability to choose the product categories (NNN) to set the product type filter that will be used to ingest and archive the WMO messages. In addition users are able to configure the EUC to alert and/or print select product types that are received from an originating office. Only messages with product categories selected on this page would be processed.

1. Click on the EUC Product Type Filter Page
2. Select the desired originator to populate the Product Type table
3. Configure the desired product categories for archiving in addition to alert and/or print:
 - a. Click the check-box under the "Product Type" column for all products that require archiving
 - b. To alert on a desired product click the associated check-box under the "Alert" column
 - c. For product Print capabilities click the associated check-box under the "Print" column
4. Click Apply.

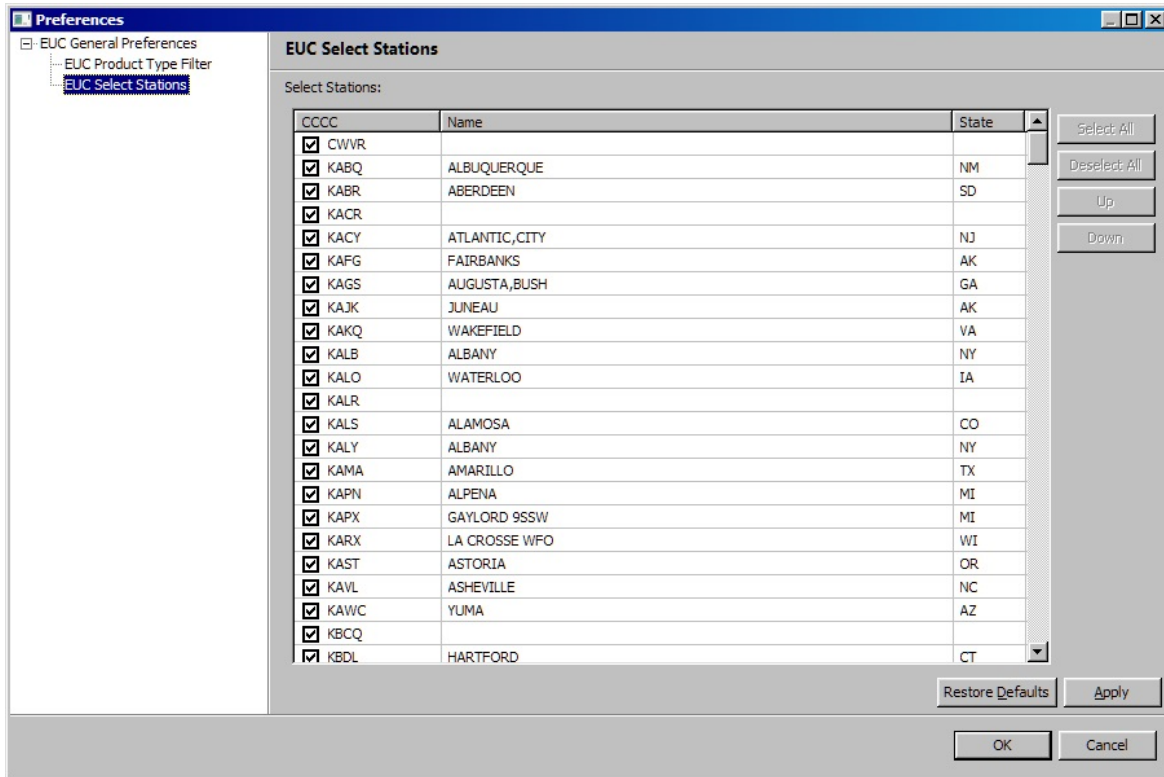
Note: The EUC "Print" feature utilizes the Windows Default Printer as the designated device for scheduling print jobs.

To select a default printer:

- Open Devices and Printers by clicking the Start button Picture of the Start button, and then, on the Start menu, clicking Devices and Printers.

- Right-click the printer you want to use, and then click Set as default printer. (You'll see a check mark on the printer's icon signifying that it's now your default printer.)

3.2.6 Station Selection



This preference provides the user with the ability to choose the stations/originator (CCCC) to set the station filter that will be used to ingest and archive the WMO messages. Originators selected on this page will have an initial Product Type filter of "ALL". See section 3.2.4 – "Product Category Selection" for information regarding tailoring products archived based on originator.

1. Click on the EUC Select Stations. To set this preference, click on any part of the table to activate the buttons to the right of the table. Click Apply once the desired stations have been selected.
2. Click OK to close the preference dialog.

4 Reference Guide

4.1 Capabilities

4.1.1 SBN Product Ingest

Ingest multicast WMO stream from the NWS DVB-S2 satellite receiver. The products are parsed, validated, and finally stored to the database and file system.

4.1.2 OI Product Ingest

Ingest OI NWS WMO text products via XMPP

4.1.3 Dual Product Ingest

Ingest products from both feeds simultaneously.

4.1.4 Product Archiving

Store (archive) all ingested WMO products for a user configurable period of up to 60 days.

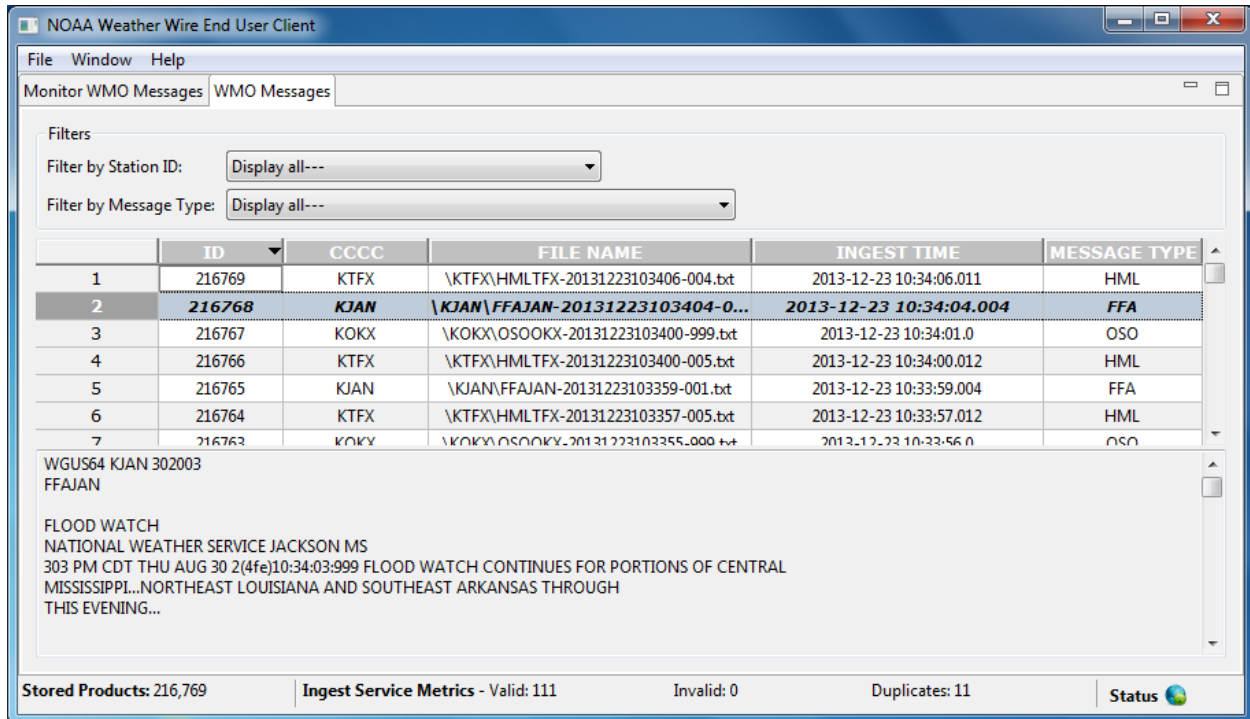
4.1.5 Product Filtering

The “Product Filtering” capability within the EUC provides a user with the ability to display archived WMO products based on the following criteria:

- Message Type
- Originator
- Test product status

4.1.6 EMWIN Support

4.2 Operating Procedure



1. Make sure the NWW-EUC application has been configured.
2. If the application is closed, open the “nww-euc” directory and execute the file name “*nww-euc.exe*” by either double-clicking or running it from the operating system command line interface.
3. Once messages are received they are:
 - a. Displayed as text within the “Monitor WMO Messages ” tab
 - b. Displayed in a table format within the “WMO Messages ” tab.
 - c. Archived to the DB.
 - d. Archived to the file-system within the directory titled “WMO_Archive”
 - i. Linux: located within home directory
 - ii. Windows: located within execution directory
4. The EUC application has a status bar at the bottom of the window to display:

- a. Valid messages count.
 - b. Invalid messages count. Messages could be marked as invalid if they are incomplete messages due to missing packets or if they do not meet the AWIPS Specification.
 - c. Duplicate messages count. Messages are marked as duplicate if they are identical (header and content) over a two-minute window. Duplicates messages could be received if neighboring WFOs share a common broadcast area (NWR) or when issues during SBN broadcast force product re-transmission.
 - d. Status. Connection status for SBN and OI interfaces.
5. To filter messages by Station ID:
- a. Click the WMO Messages tab.
 - b. Click on the Filter by Station ID combo box arrow to display the list of Stations containing: Station ID, Station name, and Station state.
 - c. Select one of the stations to only display messages originated by the selected CCCC id.
6. To filter messages by Message Type:
- a. Click the WMO Messages tab
 - b. Click on the Filter by Message Type combo box arrow to display the list of message types containing: Type, and Description.
7. To display the message content:
- a. Click on the WMO Messages tab. On the message table, select the desired message by clicking on the index cell (the leftmost column) for that row. The message content will be displayed on the text box below the table.

5 Appendix A - Stations Table

TABLE - STATIONS			
	CCCC	NAME	STATE
1	CWVR		
2	KABQ	ALBUQUERQUE	NM
3	KABR	ABERDEEN	SD
4	KACR		
5	KACY	ATLANTIC,CITY	NJ
6	KAFG	FAIRBANKS	AK
7	KAGS	AUGUSTA,BUSH	GA
8	KAJK	JUNEAU	AK
9	KAKQ	WAKEFIELD	VA
10	KALB	ALBANY	NY
11	KALO	WATERLOO	IA
12	KALR		
13	KALS	ALAMOSA	CO
14	KALY	ALBANY	NY
15	KAMA	AMARILLO	TX
16	KAPN	ALPENA	MI
17	KAPX	GAYLORD 9SSW	MI
18	KARX	LA CROSSE WFO	WI
19	KAST	ASTORIA	OR
20	KAVL	ASHEVILLE	NC
21	KBCQ		
22	KBDL	HARTFORD	CT
23	KBDR	BRIDGEPORT	CT
24	KBGM	BINGHAMTON	NY
25	KBHM	BIRMINGHAM	AL
26	KBIS	BISMARCK	ND
27	KBIX	BILOXI	MS
28	KBMX	BIRMINGHAM	AL
29	KBNO	BURNS	OR
30	KBOI	BOISE	ID
31	KBOS	BOSTON	MA
32	KBOU	DENVER/BOULDER	CO
33	KBOX	BOSTON	MA
34	KBRO	BROWNSVILLE	TX
35	KBTV	BURLINGTON	VT
36	KBUF	BUFFALO	NY
37	KBWI	BALTIMORE	MD
38	KBYZ	BILLINGS	MT
39	KCAE	COLUMBIA	SC
40	KCAK	AKRON,CANTON	OH
41	KCAR	CARIBOU	ME

42	KCHI		
43	KCHN		
44	KCHS	CHARLESTON	SC
45	KCIR		
46	KCLE	CLEVELAND	OH
47	KCLT	CHARLOTTE	NC
48	KCMH	COLUMBUS	OH
49	KCNK	CONCORDIA	KS
50	KCON	CONCORD	NH
51	KCOS	COLORADO,SPRINGS	CO
52	KCOU	COLUMBIA	MO
53	KCPR	CASPER	WY
54	KCRP	CORPUS,CHRISTI	TX
55	KCRW	CHARLESTON	WV
56	KCTP	STATE COLLEGE	PA
57	KCYS	CHEYENNE	WY
58	KDAB	DAYTONA,BEACH	FL
59	KDAY	DAYTON	OH
60	KDBQ	DUBUQUE	IA
61	KDDC	DODGE,CITY	KS
62	KDEN	DENVER	CO
63	KDLH	DULUTH	MN
64	KDMX	DES MOINES	IA
65	KDRT	DEL,RIO	TX
66	KDSM	DES,MOINES	IA
67	KDTW	DETROIT,METRO	MI
68	KDTX	DETROIT/PONTIAC	MI
69	KDVN	DAVENPORT	IA
70	KEAX	PLEASANT HILL WFO	MO
71	KEEW		
72	KEHU		
73	KEKA	EUREKA	CA
74	KEKN	ELKINS	WV
75	KEKO	ELKO	NV
76	KELY	ELY	NV
77	KEPZ	EL PASO	TX
78	KERI	ERIE	PA
79	KEUG	EUGENE	OR
80	KEVV	EVANSVILLE	IN
81	KEWR	NEWARK	NJ
82	KEWX	AUSTIN/SAN ANTONIO	TX
83	KEYW	KEY,WEST	FL
84	KFAR	FARGO	ND
85	KFAT	FRESNO	CA
86	KFCA	KALISPELL	MT
87	KFFC	PEACHTREE,CITY	GA
88	KFGF	GRAND FORKS	ND

89	KFGZ	FLAGSTAFF	AZ
90	KFLG	FLAGSTAFF	AZ
91	KFNT	FLINT	MI
92	KFSD	SIOUX,FALLS	SD
93	KFSL		
94	KFSM	FORT,SMITH	AR
95	KFWD	DALLAS/FORT WORTH	TX
96	KFWR		
97	KGEG	SPOKANE	WA
98	KGGW	GLASGOW	MT
99	KGID	HASTINGS	NE
100	KGJT	GRAND,JUNCTION	CO
101	KGLD	GOODLAND	KS
102	KGLS	GALVESTON	TX
103	KGRB	GREEN,BAY	WI
104	KGRR	GRAND,RAPIDS	MI
105	KGSP	GREENVILLE	SC
106	KGTF	GREAT,FALLS	MT
107	KGUM		
108	KGYX	GRAY	ME
109	KHFO		
110	KHGX	HOUSTON NWSO	TX
111	KHLN	HELENA	MT
112	KHNX	SAN JOAQUIN VALLEY/HANFORD	CA
113	KHON	HURON	SD
114	KHTL	HOUGHTON,LAKE	MI
115	KHUN	HUNTSVILLE	AL
116	KIAD	DULLES,AIRPORT	VA
117	KICT	WICHITA	KS
118	KILG	WILMINGTON	DE
119	KILM	WILMINGTON	NC
120	KILN	WILMINGTON	OH
121	KILX	LINCOLN	IL
122	KIND	INDIANAPOLIS	IN
123	KINL	INTERNATIONAL,FALLS	MN
124	KISN	WILLISTON	ND
125	KIWX	NORTHERN INDIANA WFO	IN
126	KJAN	JACKSON	MS
127	KJAX	JACKSONVILLE	FL
128	KJKL	JACKSON	KY
129	KKCI		
130	KKEY	KEY WEST	FL
131	KKRF		
132	KLAN	LANSING	MI
133	KLAX	LOS,ANGELES	CA
134	KLBB	LUBBOCK	TX
135	KLBF	NORTH,PLATTE	NE

136	KLCH	LAKE,CHARLES,REGIONAL	LA
137	KLEX	LEXINGTON	KY
138	KLGA	NEW,YORK	NY
139	KLIC	LIMON	CO
140	KLIX	NEW ORLEANS/BATON ROUGE	LA
141	KLKN	ELKO	NV
142	KLMK	LOUISVILLE	KY
143	KLMT	KLAMATH,FALLS	OR
144	KLNK	LINCOLN	NE
145	KLOT	ROMEOVILLE WFO	IL
146	KLOX	LOS ANGELES/OXNARD	CA
147	KLSE	LA,CROSSE	WI
148	KLSX	ST. LOUIS	MO
149	KLUB	LUBBOCK	TX
150	KLWS	LEWISTON	ID
151	KLWX	BALTIMORE/WASHINGTON	VA
152	KLYH	LYNCHBURG	VA
153	KLZK	NORTH LITTLE ROCK WFO	AR
154	KMAF	MIDLAND	TX
155	KMEG	MEMPHIS	TN
156	KMEI	MERIDIAN	MS
157	KMFD	MANSFIELD	OH
158	KMFL	MIAMI	FL
159	KMFR	MEDFORD	OR
160	KMGM	MONTGOMERY	AL
161	KMHX	NEWPORT/MOREHEAD CITY	NC
162	KMKC	KANSAS,CITY	MO
163	KMKE	MILWAUKEE	WI
164	KMKG	MUSKEGON	MI
165	KMKX	MILWAUKEE/SULLIVAN	WI
166	KMLB	MELBOURNE	FL
167	KMLI	MOLINE	IL
168	KMLS	MILES,CITY	MT
169	KMMO	MARSEILLES	IL
170	KMOB	MOBILE	AL
171	KMPX	CHANHASSEN WSFO	MN
172	KMQT	MARQUETTE	MI
173	KMRX	MORRISTOWN/KNOXVILLE	TN
174	KMSN	MADISON	WI
175	KMSO	MISSOULA	MT
176	KMSP	MINNEAPOLIS	MN
177	KMSR		
178	KMTR	MEETEESE,RIM	WY
179	KMWI		
180	KNCF		
181	KNEC		
182	KNES		

183	KNHC		
184	KNHO		
185	KNMW		
186	KNYC	CENTRAL,PARK	NY
187	KOAX	VALLEY NWS	NE
188	KOFK	NORFOLK	NE
189	KOHX	NASHVILLE	TN
190	KOKX	NEW YORK	NY
191	KOLM	OLYMPIA	WA
192	KOMA	OMAHA	NE
193	KORH	WORCESTER	MA
194	KORN		
195	KOTX	SPOKANE WFO	WA
196	KOUN	NORMAN/OKLAHOMA CITY	OK
197	KPAH	PADUCAH	KY
198	KPBP		
199	KPBX		
200	KPBZ	PITTSBURGH	PA
201	KPDT	PENDLETON	OR
202	KPDX	PORTLAND	OR
203	KPHI	MOUNT HOLLY/PHILADELPHIA	NJ
204	KPHL	PHILADELPHIA	PA
205	KPHX	PHOENIX	AZ
206	KPIA	PEORIA,REGIONAL	IL
207	KPIH	POCATELLO	ID
208	KPQR	PORTLAND	OR
209	KPSR	PHOENIX	AZ
210	KPTR		
211	KPUB	PUEBLO	CO
212	KPVD	PROVIDENCE	RI
213	KPWM	PORTLAND	ME
214	KRAH	RALEIGH	NC
215	KRAP	RAPID,CITY	SD
216	KRDD	REDDING	CA
217	KRDU	RALEIGH-DURHAM,AIRPORT	NC
218	KREV	RENO	NV
219	KRFD	ROCKFORD	IL
220	KRHA		
221	KRIC	RICHMOND	VA
222	KRIW	RIVERTON	WY
223	KRLX	CHARLESTON	WV
224	KRNK	BLACKSBURG	VA
225	KROW	ROSWELL	NM
226	KRSA		
227	KRST	ROCHESTER	MN
228	KSAC	SACRAMENTO	CA
229	KSAN	SAN,DIEGO	CA

230	KSAT	SAN,ANTONIO	TX
231	KSAV	SAVANNAH	GA
232	KSCK	STOCKTON	CA
233	KSDF	LOUISVILLE	KY
234	KSEA	SEATTLE	WA
235	KSEW	SEATTLE SAND PT WFO	WA
236	KSFM	SANFORD	ME
237	KSFO	SAN,FRANCISCO	CA
238	KSGF	SPRINGFIELD	MO
239	KSGX	SAN DIEGO	CA
240	KSHR	SHERIDAN	WY
241	KSHV	SHREVEPORT	LA
242	KSJT	SAN,ANGELO	TX
243	KSJU	SAN JUAN	PR
244	KSLC	SALT,LAKE,CITY	UT
245	KSLE	SALEM	OR
246	KSMX	SANTA,MARIA	CA
247	KSPC		
248	KSPI	SPRINGFIELD	IL
249	KSSM		
250	KSTC	ST.,CLOUD	MN
251	KSTL	ST.,LOUIS	MO
252	KSTO	SACRAMENTO	CA
253	KSTR		
254	KSUX	SIOUX,CITY	IA
255	KTAE	TALLAHASSEE	FL
256	KTAR		
257	KTBW	TAMPA	FL
258	KTFX	GREAT FALLS	MT
259	KTIR		
260	KTOL	TOLEDO	OH
261	KTOP	TOPEKA	KS
262	KTRI	TRI-CITIES	TN
263	KTSA	TULSA	OK
264	KTUA		
265	KTUP	TUPELO	MS
266	KTWC	TUCSON	AZ
267	KUMN	MONETT 4SW	MO
268	KUNR	RAPID CITY	SD
269	KVCT	VICTORIA	TX
270	KVEF	LAS VEGAS	NV
271	KVHW		
272	KVUY		
273	KWAL	WALLOPS,ISLAND	VA
274	KWBC		
275	KWMC	WINNEMUCCA	NV
276	KWNA		

277	KWNB		
278	KWNC		
279	KWNH		
280	KWNM		
281	KWNO		
282	KWNP		
283	KWNS		
284	KYKM	YAKIMA	WA
285	KYNG	YOUNGSTOWN	OH
286	KZHN		
287	NSTU	PAGO PAGO WSO AP-	AS
288	PAAQ	PALMER	AK
289	PABE	BETHEL	AK
290	PABI	BIG,DELTA	AK
291	PABR	BARROW	AK
292	PABT	BETTLES	AK
293	PACD	COLD,BAY	AK
294	PACR		
295	PACV	CORDOVA	AK
296	PADQ	KODIAK	AK
297	PAFA	FAIRBANKS	AK
298	PAFC		
299	PAFG		
300	PAGK	GULKANA	AK
301	PAHO	HOMER	AK
302	PAJK		
303	PAJN	JUNEAU	AK
304	PAKN	KING,SALMON	AK
305	PAMC	MCGRATH	AK
306	PANC	ANCHORAGE	AK
307	PANT	ANNETTE,ISLAND	AK
308	PAOM	NOME	AK
309	PAOT	KOTZEBUE	AK
310	PASN	SAINT,PAUL,ISLAND	AK
311	PATA	TANANA	AK
312	PATK	TALKEETNA	AK
313	PAUN	UNALAKLEET	AK
314	PAVD	VALDEZ	AK
315	PAVW	VALDEZ	AK
316	PAWU		
317	PAYA	YAKUTAT	AK
318	PGUM	AGANA	GU
319	PHEB		
320	PHFO	HONOLULU	HI
321	PHLI	LIHUE	HI
322	PHNL	HONOLULU	HI
323	PHTO	HILO	HI

324	PKMR		
325	PTKK	CHUUK WSO AP	FM
326	PTKR	KOROR WSO	PW
327	PTRO		
328	PTTP		
329	PTYA	YAP ISLAND WSO AP	FM
330	TJSJ	SAN,JUAN	PR

6 Appendix B – Product Type Table

TABLE – PRODUCT TYPES			
	Product Type	Description	Priority
1	CEM	CIVIL EMERGENCY MESSAGE	1
2	CFP	CONVECTIVE FORECAST PRODUCT	1
3	CFW	COASTAL FLOOD WARNINGS, WATCHES OR STATEMENTS	1
4	FFW	FLASH FLOOD WARNING	1
5	FLW	FLOOD WARNING	1
6	FWM	MISCELLANEOUS FIRE WEATHER PRODUCT	1
7	NPW	NON-PRECIPITATION WARNINGS, WATCHES, ADVISORIES	1
8	SVR	SEVERE THUNDERSTORM WARNING	1
9	TOR	TORNADO WARNING	1
10	TSU	TSUNAMI WATCH/WARNING	1
11	WSW	WINTER WEATHER WARNINGS, WATCHES, ADVISORIES	1
12	FFA	FLASH FLOOD WATCH	2
13	FFS	FLASH FLOOD STATEMENT	2
14	FSS	URBAN AND SMALL STREAM FLOOD ADVISORY	2
15	HLS	HURRICANE LOCAL STATEMENT	2
16	LSR	LOCAL STORM REPORT	2
17	MAW	AMENDED MARINE FORECAST	2
18	PSH	POST STORM HURRICANE REPORT	2
19	ROB	RADAR OBSERVATION	2
20	SLS	SEVERE LOCAL STORM WATCH AND AREAL OUTLINE	2
21	SMW	SPECIAL MARINE WARNING	2
22	SPF	STORM STRIKE PROBABILITY BULLETIN(TPC)	2
23	SPS	SPECIAL WEATHER STATEMENT	2
24	SVS	SEVERE WEATHER STATEMENT	2
25	SWO	SEVERE STORM OUTLOOK NARRATIVE (AC)	2
26	TCV	TROPICAL CYCLONE VTEC	2
27	TSM	TSUNAMI TIDE/SEISMIC MESSAGE	2
28	WOU	Tornado/Severe Thunderstorm Watch	2
29	3HR	ROUTINE SPACE ENVIRONMENT PRODUCT ISSUED EVERY 3 HOURS	3
30	ABV	RAWINSONDE DATA ABOVE 100 MILLIBARS *	3
31	ADM	ALERT ADMINISTRATIVE MESSAGE	3
32	ALT	SPACE ENVIRONMENT ALERT	3
33	ASA	AIR STAGNATION ADVISORY	3
34	BAC		3
35	BRT	Hourly Roundup for Weather Radio	3
36	CCF	CODED CITY FORECAST	3
37	CUR	ROUTINE SPACE ENVIRONMENT PRODUCTS ISSUED FOR CURRENT DATA	3
38	DAY	ROUTINE SPACE ENVIRONMENT PRODUCT ISSUED DAILY	3
39	DSA	UNNUMBERED DEPRESSION / SUSPICIOUS AREA ADVISORY	3
40	FLS	FLOOD STATEMENT	3
41	FTM	WSR-88D RADAR OUTAGE NOTIFICATION / FREE TEXT MESSAGE	3
42	FWN	FIRE WEATHER NOTIFICATION	3

43	GLW		3
44	GPH		3
45	GPT		3
46	HSF	HIGH SEAS FORECAST	3
47	LSH	LAKESHORE WARNING OR STATEMENT	3
48	MAN	RAWINSONDE OBSERVATION MANDATORY LEVELS *	3
49	MON	ROUTINE SPACE ENVIRONMENT PRODUCT ISSUED MONTHLY	3
50	MTR	METAR FORMATTED SURFACE WEATHER OBSERVATION *	3
51	MVF	MARINE VERIFICATION CODED FORECAST	3
52	MWS	MARINE WEATHER STATEMENT	3
53	NOT		3
54	OMR	OTHER MARINE PRODUCTS	3
55	OSO	OTHER SURFACE OBSERVATIONS	3
56	OUA	OTHER UPPER AIR DATA	3
57	PLS	PLAIN LANGUAGE SHIP REPORT	3
58	PMD	PROGNOSTIC METEOROLOGICAL DISCUSSION	3
59	QPS	QUANTITATIVE PRECIPITATION STATEMENT	3
60	RR6	ASOS SHEF PRECIP CRITERIA MESSAGE (COMMISSIONED)	3
61	RR8	HYDROLOGY-METEOROLOGY DATA REPORT PART 8	3
62	RRA	AUTOMATED HYDROLOGIC OBSERVATION STA REPORT (AHOS)	3
63	RRM	MISCELLANEOUS HYDROLOGIC DATA	3
64	RTP	REGIONAL MAX/MIN TEMP AND PRECIPITATION TABLE	3
65	RVM	MISCELLANEOUS RIVER PRODUCT	3
66	RWF		3
67	SCA		3
68	SCP	SATELLITE CLOUD PRODUCT	3
69	SDO	SUPPLEMENTARY DATA OBSERVATION (ASOS)	3
70	SGL	RAWINSONDE OBSERVATION SIGNIFICANT LEVELS *	3
71	SIM	SATELLITE INTERPRETATION MESSAGE	3
72	SMF	SMOKE MANAGEMENT WEATHER FORECAST	3
73	STW	CANADIAN STORM WARNING	3
74	TCD	TROPICAL CYCLONE DISCUSSION	3
75	TCE	TROPICAL CYCLONE POSITION ESTIMATE	3
76	TCM	MARINE/AVIATION TROPICAL CYCLONE ADVISORY	3
77	TCP	PUBLIC TROPICAL CYCLONE ADVISORY	3
78	TCU	TROPICAL CYCLONE UPDATE	3
79	TRP		3
80	TST	TEST MESSAGE	3
81	TWB	TRANSCRIBED WEATHER BROADCAST *	3
82	TWD	TROPICAL WEATHER DISCUSSION	3
83	TWO	TROPICAL WEATHER OUTLOOK AND SUMMARY	3
84	TWS	TROPICAL WEATHER SUMMARY	3
85	WAR	SPACE ENVIRONMENT WARNING	3
86	WAT	SPACE ENVIRONMENT WATCH	3
87	WCM		3
88	WCN	WEATHER WATCH CLEARANCE NOTIFICATION	3
89	WEK	ROUTINE SPACE ENVIRONMENT PRODUCT ISSUED WEEKLY	3

90	WWA	WATCH STATUS REPORT	3
91	ADA	ALARM/ALERT ADMINISTRATIVE MSG (URGENT NOTIFICATION)	4
92	ADN		4
93	AFD	AREA FORECAST DISCUSSION	4
94	AGF	AGRICULTURAL FORECAST	4
95	AGM		4
96	AGO	AGRICULTURAL OBSERVATIONS	4
97	AOA		4
98	AOI		4
99	AQI	AIR QUALITY INDEX STATEMENT	4
100	AVM	AVIATION VERIFICATION MATRIX	4
101	AWG	NATIONAL ATTACK WARNING	4
102	CGR	COAST GUARD SURFACE REPORT	4
103	CLI	CLIMATOLOGICAL REPORT (DAILY)	4
104	CMM	CODED CLIMATOLOGICAL MONTHLY MEANS	4
105	CWF	COASTAL WATERS FORECAST	4
106	EFP	3 TO 5 DAY EXTENDED FORECAST	4
107	EOL	AVERAGE 6 TO 10 DAY WEATHER OUTLOOK (LOCAL)	4
108	EQR	EARTHQUAKE REPORT	4
109	EXM		4
110	EXT		4
111	FFG	FLASH FLOOD GUIDANCE	4
112	FFH	HEADWATER GUIDANCE	4
113	FPC		4
114	FRF		4
115	FWF	ROUTINE FIRE WX FCST(WITH/WITHOUT 6-10 DAY OUTLOOK)	4
116	FWL	LAND MANAGEMENT FORECASTS	4
117	FWS	SUPPRESSION FORECAST	4
118	FZL	FREEZING LEVEL DATA (RADAT)	4
119	GLF	GREAT LAKES FORECAST	4
120	HOL		4
121	HWR	Hourly Weather Roundup	4
122	HWU		4
123	IWC		4
124	LCD	Preliminary Local Climatological Data	4
125	LCO	LOCAL COOPERATIVE OBSERVATION	4
126	LFP	LOCAL FORECAST	4
127	MAP	MEAN AREAL PRECIPITATION	4
128	MOB	MOB Observations	4
129	MSA		4
130	NNN		4
131	NSH	NEARSHORE MARINE FORECAST	4
132	NWX		4
133	OFF	OFFSHORE FORECAST	4
134	OPU	OTHER PUBLIC PRODUCTS	4
135	OWA		4
136	OWB		4

137	OWS		4
138	OWW		4
139	PWN		4
140	PWO	PUBLIC SEVERE WEATHER OUTLOOK	4
141	REC	RECREATIONAL REPORT	4
142	RFD	RANGELAND FIRE DANGER FORECAST	4
143	RFW	RED FLAG WARNING	4
144	RNS	Rain Information Statement	4
145	RVF	RIVER FORECAST	4
146	RVR	RIVER RECREATION STATEMENT	4
147	RVS	RIVER STATEMENT	4
148	RWS	REGIONAL WEATHER SUMMARY	4
149	SAB	SNOW AVALANCHE BULLETIN	4
150	SAF	SPECI AGRI WX FCST/ADVISORY/FLYING FARMER FCST OUTLOOK	4
151	SAW	PRELIM NOTICE OF WATCH & CANCELLATION MSG AVIATION)	4
152	SCC	STORM SUMMARY	4
153	SCS	SELECTED CITIES SUMMARY	4
154	SDS	SPECIAL DISPERSION STATEMENT	4
155	SFD	STATE FORECAST DISCUSSION	4
156	SWS	STATE WEATHER SUMMARY	4
157	TAV	TRAVELERS FORECAST TABLE	4
158	TDM		4
159	TDT		4
160	TID	TIDE REPORT	4
161	TMM		4
162	TMT		4
163	TUV	Weather Bulletin	4
164	UAG		4
165	WCR	WEEKLY WEATHER AND CROP REPORT	4
166	ZFL		4
167	ZFP	ZONE FORECAST PRODUCT	4
168	30A		5
169	30L	AVERAGE MONTHLY WEATHER OUTLOOK (LOCAL)	5
170	30N		5
171	90N		5
172	ADR	NWS ADMINISTRATIVE MESSAGE (EXTERNAL)	5
173	ADW	ADMINISTRATIVE MESSAGE FOR NWS	5
174	AFL		5
175	AFM	AREA FORECAST MATRICES	5
176	AFP	AREA FORECAST PRODUCT	5
177	AWS	AREA WEATHER SUMMARY	5
178	AWU	AREA WEATHER UPDATE	5
179	CFL		5
180	CLM	CLIMATOLOGICAL REPORT (MISC, INC MONTHLY REPORTS)	5
181	CSC	CANADIAN SELECTED CITIES FORECAST (FPCN12 CWAO)	5
182	DYN		5
183	EON	AVERAGE 6 TO 10 DAY WEATHER OUTLOOK (NATIONAL)	5

184	ESF	FLOOD POTENTIAL OUTLOOK	5
185	ESG	EXTENDED STREAMFLOW GUIDANCE	5
186	ESP	EXTENDED STREAMFLOW PREDICTION	5
187	ESS	WATER SUPPLY OUTLOOK	5
188	FLN	NATIONAL FLOOD SUMMARY	5
189	FOF	UPPER WIND FALLOUT FORECAST	5
190	FWE	EXTENDED FIRE WEATHER OUTLOOK	5
191	FWO	FIRE WEATHER OBSERVATION	5
192	GLO	GREAT LAKES STORM OUTLOOK	5
193	GLS	GREAT LAKES STORM SUMMARY	5
194	HMD	HYDROMETEOROLOGICAL DISCUSSION	5
195	HRR	Weather Roundup	5
196	HYD	DAILY HYDROMETEOROLOGICAL PRODUCTS	5
197	HYM	MONTHLY HYDROMETEOROLOGICAL PLAIN LANGUAGE PRODUCT	5
198	HYW	WEEKLY HYDROMETEOROLOGICAL PLAIN LANGUAGE PRODUCT	5
199	ICE	ICE FORECAST	5
200	MIS	MISCELLANEOUS LOCAL PRODUCT	5
201	NAH	165 RADAR 0.9-1.1 HYDROMETEOR CLASS .13NM RES ID 165/DHC DS.165ha	5
202	NOW	SHORT TERM FORECAST	5
203	OCF		5
204	PFM	POINT FORECAST MATRICES	5
205	PNS	PUBLIC INFORMATION STATEMENT	5
206	PRE	Preliminary Forecasts	5
207	PVA		5
208	RCM	WSR-88D RADAR CODED MESSAGE	5
209	RDF	REVISED DIGITAL FORECAST	5
210	RER	RECORD REPORT	5
211	RET	EAS Activation Request	5
212	ROC		5
213	RPT		5
214	RR1	HYDROLOGY METEOROLOGY DATA REPORT PART 1	5
215	RR2	HYDROLOGY-METEOROLOGY DATA REPORT PART 2	5
216	RR3	HYDROLOGY-METEOROLOGY DATA REPORT PART 3	5
217	RR4	HYDROLOGY-METEOROLOGY DATA REPORT PART 4	5
218	RR5	HYDROLOGY-METEOROLOGY DATA REPORT PART 5	5
219	RR7	ASOS SHEF HOURLY ROUTINE MESSAGE (COMMISSIONED)	5
220	RR9	HYDROLOGY-METEOROLOGY DATA REPORT PART 9	5
221	RVA	RIVER SUMMARY	5
222	RVI	RIVER ICE STATEMENT	5
223	RWR	REGIONAL WEATHER ROUNDUP	5
224	SAD	DAILY SURFACE AVIATION WEATHER SUMMARY	5
225	SAT	APT Prediction	5
226	SCD	SUPPLEMENTARY CLIMATOLOGICAL DATA (ASOS)	5
227	SDD		5
228	SFP	STATE FORECAST	5
229	SIG	INTERNATIONAL SIGMET / CONVECTIVE SIGMET	5
230	STO	ROAD CONDITION REPORTS (STATE AGENCIES)	5

231	STP	STATE MAX/MIN TEMPERATURE AND PRECIPITATION TABLE	5
232	SWR		5
233	TAF	TERMINAL AERODROME FORECAST *	5
234	TMA	TSUNAMI TIDE/SEISMIC MESSAGE ACKNOWLEDGMENT	5
235	TPT	TEMPERATURE PRECIPITATION TABLE (NATL AND INTNL)	5
236	UVI	ULTRAVIOLET INDEX	5
237	VFT	TERMINAL AERODROME FORECAST (TAF) VERIFICATION	5
238	WDA	WEEKLY DATA FOR AGRICULTURE	5
239	WMD		5
240	WRK	LOCAL WORK FILE (ii IS CHOSEN BY SITE OR REGION)	5
241	WST	TROPICAL CYCLONE SIGMET	5
242	WWP	SEVERE THUNDERSTORM/TORNADO WATCH PROBABILITIES	5
243	ZPP		5
244	18A	18 HOUR WINTEM	9
245	24A	24 HOUR WINTEM	9
246	5TC	500 MILLIBAR TYPE CORRELATION	9
247	ADV	GENERIC SPACE ENVIRONMENT ADVISORY	9
248	ADX	ADMIN ALERT FOR NON-RECEIPT OF TRANSMISSION	9
249	ALM	SPACE ENVIRONMENT ALARM	9
250	APG	AIR STAGNATION GUIDANCE NARRATIVE	9
251	AQA	AIR QUALITY ADVISORY	9
252	ARP	AIREPS *	9
253	AVA	AVALANCHE WATCH	9
254	AVW	AVALANCHE WARNING	9
255	AWO	Area Weather Outlook	9
256	AWW	AIRPORT WEATHER WARNING	9
257	BOY	BUOY REPORTS - SYNOPTIC AND NON SYNOPTIC TIMES	9
258	BRG	Coast Guard Observations	9
259	CAE	CHILD ABDUCTION EMERGENCY	9
260	CAP	ALERT MESSAGES IN COMMON ALERTING PROTOCOL XML	9
261	CDW	CIVIL DANGER WARNING	9
262	CF6	WFO DAILY CLIMATE WEB PAGE MESSAGES	9
263	CHG	COMPUTER HURRICANE GUIDANCE	9
264	CLA	Climatological Report (Annual)	9
265	CLQ	Climatological Report (Quarterly)	9
266	CLS	SEASONAL CLIMATE SUMMARY PRODUCTS	9
267	CLT	Climate Report	9
268	COD	CODED ANALYSIS AND FORECASTS	9
269	CPF	Great Lakes Port Forecast	9
270	CRF	CONTINGENCY RIVER FORECAST	9
271	CWA	CENTER (CWSU) WEATHER ADVISORY	9
272	CWS	CENTER (CWSU) WEATHER STATEMENT	9
273	DAA	170 QPE ONE HOUR DIGITAL ACCUMULATION ARRAY ID 170/DAA DS.170aa	9
274	DDO	Daily Dispersion Outlook	9
275	DGT	DROUGHT, INFORMATION STATEMENT	9
276	DHR	DIGITAL HYBRID REFLECTIVITY 32/DHR	9
277	DOD	174 QPE-PPS ONE HOUR ACCUMULATION DIFFERENCE ID 175/DOD DS.174od	9

278	DPA	RADAR HOURLY DIGITAL PRECIPITATION ARRAY 81/DPA	9
279	DPR	176 QPE INSTANTEANEOUS PRECIPITATION RATE ID 176/DPR DS.176pr	9
280	DSD	175 QPE-PPS STORM TOTAL ACCUMULATION DIFFERENCE ID 175/DSD DS.175sd	9
281	DSM	ASOS DAILY SUMMARY	9
282	DSP	ADIGITAL STORM TOTAL PRECIPITATION (DSP) NEXRAD	9
283	DST	ASOS DAILY SUMMARY TEST	9
284	DU3	173 QPE USER SELECTABLE 3 HOUR ACCUMULATION ID 173/DUA DS.173u1	9
285	DU6	173 QPE USER SELECTABLE 24 HOUR ACCUMULATION ID 173/DUA DS.173u3	9
286	DVL	134 RADAR DIGITAL VERTICALLY INTEGRATED LIQUID ID 134/DVL Add No 7K 6-14/hr RPCCDS & SBN DS.134il	9
287	EET	135 RADAR ENHANCED ECHO TOPS ID 135/EET Add No 3K 6-14/hr RPCCDS & SBN DS.135et	9
288	EQI	EARTHQUAKE INFORMATION BULLETIN	9
289	EQW	EARTHQUAKE WARNING	9
290	EVI	EVACUATION IMMEDIATE	9
291	EWV	EXTREME WIND WARNING TEXT PRODUCTS	9
292	FA0	AVIATION AREA FORECAST (PACIFIC)	9
293	FA1	AVIATION AREA FORECAST (NORTHEAST U.S.)	9
294	FA2	AVIATION AREA FORECAST (SOUTHEAST U.S.)	9
295	FA3	AVIATION AREA FORECAST (NORTH CENTRAL U.S.)	9
296	FA4	AVIATION AREA FORECAST (SOUTH CENTRAL U.S.)	9
297	FA5	AVIATION AREA FORECAST (U.S. ROCKY MOUNTAINS)	9
298	FA6	AVIATION AREA FORECAST (U.S. WEST COAST)	9
299	FA7	AVIATION AREA FORECAST (JUNEAU, ALASKA)	9
300	FA8	AVIATION AREA FORECAST (ANCHORAGE, ALASKA)	9
301	FA9	AVIATION AREA FORECAST (FAIRBANKS, ALASKA)	9
302	FAK	ALASKAN MODEL OUTPUT STATISTICS (MOS) FORECAST	9
303	FAN	AVN BASED MOS GUIDANCE	9
304	FAV	AVIATION AREA FORECAST (FOR INTERNATIONALS ONLY)	9
305	FBP	AK FOUS 24,36,& 48-HR BOUNDARY LYR WINDS & PRECIP	9
306	FD0	24 HR FD WINDS ALOFT FCST (45,000 AND 53,000 FT)	9
307	FD1	6 HOUR WINDS ALOFT FORECAST	9
308	FD2	12 HOUR WINDS ALOFT FORECAST	9
309	FD3	24 HOUR WINDS ALOFT FORECAST	9
310	FD4	Winds Aloft Forecast	9
311	FD5	Winds Aloft Forecast	9
312	FD6	Winds Aloft Forecast	9
313	FD7	Winds Aloft Forecast	9
314	FD8	6 HOUR FD WINDS ALOFT FCST (45,000 AND 53,000 FT)	9
315	FD9	12 HR FD WINDS ALOFT FCST (45,000 AND 53,000 FT)	9
316	FDI	FIRE DANGER INDICES	9
317	FMR	FORECAST MEDIUM RANGE GUIDANCE	9
318	FOH	ETA FOUS FREEZING AND RELATIVE HUMIDITY	9
319	FRH	FOUS RELATIVE HUMIDITY/TEMPERATURE GUIDANCE	9
320	FRW	FIRE WARNING	9
321	FSH	NATIONAL MARINE FISHERIES ADMINISTRATIVE SERVICE MESSAGE	9
322	FTJ	FOUS TRAJECTORY FORECAST	9
323	FTP	FOUS PROG MAX/MIN TEMP/POP GUIDANCE	9

324	FWA	FIRE WEATHER ADMINISTRATIVE MESSAGE	9
325	FWC	FOUS WIND/CLOUD GUIDANCE	9
326	FWD	FIRE WEATHER OUTLOOK DISCUSSION	9
327	FWW	FIRE WEATHER WATCH	9
328	GRE	GREEN	9
329	GSM	GENERAL STATUS MESSAGE	9
330	HCM	HYDROMETEOROLOGICAL COORDINATION MESSAGE	9
331	HD1	RFC DERIVED QPF DATA PRODUCT	9
332	HD2	RFC DERIVED QPF DATA PRODUCT	9
333	HD3	RFC DERIVED QPF DATA PRODUCT	9
334	HD4	RFC DERIVED QPF DATA PRODUCT	9
335	HD5	RFC DERIVED QPF DATA PRODUCT	9
336	HD6	RFC DERIVED QPF DATA PRODUCT	9
337	HD7	RFC DERIVED QPF DATA PRODUCT	9
338	HD8	RFC DERIVED QPF DATA PRODUCT	9
339	HD9	RFC DERIVED QPF DATA PRODUCT	9
340	HDP	WSR-88D HOURLY DIGITAL PRECIPITATION ARRAY	9
341	HHC	177 HYBRID SCAN HYDROMETEOR CLASSIFICATION ID 177/HHC DS.177hh	9
342	HML	Hydro Obs/Forecasts from WFO/RFCs in XML Format	9
343	HMW	HAZARDOUS MATERIALS WARNING	9
344	HP1	RFC QPF VERIFICATION PRODUCT	9
345	HP2	RFC QPF VERIFICATION PRODUCT	9
346	HP3	RFC QPF VERIFICATION PRODUCT	9
347	HP4	RFC QPF VERIFICATION PRODUCT	9
348	HP5	RFC QPF VERIFICATION PRODUCT	9
349	HP6	RFC QPF VERIFICATION PRODUCT	9
350	HP7	RFC QPF VERIFICATION PRODUCT	9
351	HP8	RFC QPF VERIFICATION PRODUCT	9
352	HP9	RFC QPF VERIFICATION PRODUCT	9
353	HWO	HAZARDOUS WEATHER OUTLOOK	9
354	IDM	Ice Drift Vectors	9
355	INI	ADMINISTR [NOUS51 KWBC]	9
356	IOB	ICE OBSERVATION	9
357	IRM	INTERIM RADAR MESSAGE 83/IRM	9
358	KPA	KEEP ALIVE MESSAGE	9
359	LAE	LOCAL AREA EMERGENCY	9
360	LAW	GREAT LAKES WEATHER OBSERVATION (SHIP SYNOP CODE)	9
361	LEW	LAW ENFORCEMENT WARNING	9
362	LKE	Lake Stages	9
363	LLS	LOW-LEVEL SOUNDING	9
364	LOW	Low Temperatures	9
365	LTG	LIGHTNING DATA	9
366	MAV	MOS AVIATION-BASED GUIDANCE FROM AVN MODEL	9
367	MEF	AFOS FORECAST VERIFICATION MATRIX	9
368	MET	ETA-BASED MOS ALPHANUMERIC MESSAGE	9
369	MEX	MOS EXTENDED-RANGE GUIDANCE FROM MRF MODEL	9
370	MIM	MARINE INTERPRETATION MESSAGE	9

371	MRM	MISSING RADAR MESSAGE (WSR-88D)	9
372	MRP	TECHNIQUES DEVELOPMENT LABORATORY MARINE PRODUCT	9
373	MSM	ASOS MONTHLY SUMMARY MESSAGE	9
374	MST	ASOS MONTHLY SUMMARY MESSAGE TEST	9
375	MTT	METAR TEST MESSAGE (ASOS) *	9
376	MWW	MARINE WEATHER WARNING	9
377	N0C	161 RADAR 0.4-0.8 CORR CFFCNT .13NM RES 256 LEVELS ID 161/DCC DS.161c0	9
378	N0H	165 RADAR 0.4-0.8 HYDROMETEOR CLASS .13NM RES ID 165/DHC DS.165h0	9
379	N0K	163 RADAR 0.4-0.8 SPEC DIFF PHASE .13NM RES 256 LVLS ID 163/DKD DS.163k0	9
380	N0M	166 RADAR 0.4-0.8 MELTING LAYER ID 166/ML DS.166m0	9
381	N0Q	94 RADAR 0.4-0.8 REFLECTIVITY .54NM RES 256 LEVELS ID 94/DR Add No 20K 6-14/hr RPCCDS & SBN DS.p94r0	9
382	N0R	RADAR .5 REFLECTIVITY .54NM RES 16 LEVELS ID 19/R	9
383	N0S	RADAR .5 STORM REL. VELOCITY .54NM RES 16 LVLS ID 56/SRM	9
384	N0U	99 RADAR 0.4-0.8 VELOCITY .13NM RES 256 LEVELS ID 99/DV Add No 55K 6-14/hr RPCCDS & SBN DS.p99v0	9
385	N0V	RADAR .5 VELOCITY .54NM RES 16 LEVELS ID 27/V	9
386	N0W	RADAR BASE RADIAL VELOCITY 25/V	9
387	N0X	159 RADAR 0.4-0.8 DIFF RFLCTVTY .13NM RES 256 LEVELS ID 159/DZD DS.159x0	9
388	N0Z	RADAR .5 REFLECTIVITY 1.1NM RES 16 LEVELS ID 20/R	9
389	N1C	161 RADAR 1.2-1.6 CORR CFFCNT .13NM RES 256 LEVELS ID 161/DCC DS.161c1	9
390	N1H	165 RADAR 1.2-1.6 HYDROMETEOR CLASS .13NM RES ID 165/DHC DS.165h1	9
391	N1K	163 RADAR 1.2-1.6 SPEC DIFF PHASE .13NM RES 256 LVLS ID 163/DKD DS.163k1	9
392	N1M	166 RADAR 1.2-1.6 MELTING LAYER ID 166/ML DS.166m1	9
393	N1P	RADAR 1 HOUR PRECIPITATION ACCUMULATION 78/OHP	9
394	N1Q	94 RADAR 1.2-1.6 REFLECTIVITY .54NM RES 256 LEVELS ID 94/DR Add No 12K 6-14/hr RPCCDS & SBN DS.p94r1	9
395	N1R	RADAR 1.5 REFLECTIVITY .54NM RES 16 LEVELS ID 19/R	9
396	N1S	RADAR 1.5 STORM REL. VELOCITY .54NM RES 16 LVLS ID 56/SRM	9
397	N1U	99 RADAR 1.2-1.6 VELOCITY .13NM RES 256 LEVELS ID 99/DV Add No 30K 6-14/hr RPCCDS & SBN DS.p99v1	9
398	N1V	RADAR 1.5 VELOCITY .54NM RES 16 LEVELS ID 27/V	9
399	N1X	159 RADAR 1.2-1.6 DIFF RFLCTVTY .13NM RES 256 LEVELS ID 159/DZD DS.159x1	9
400	N2C	161 RADAR 2.1-2.6 CORR CFFCNT .13NM RES 256 LEVELS ID 161/DCC DS.161c2	9
401	N2H	165 RADAR 2.1-2.6 HYDROMETEOR CLASS .13NM RES ID 165/DHC DS.165h2	9
402	N2K	163 RADAR 2.1-2.6 SPEC DIFF PHASE .13NM RES 256 LVLS ID 163/DKD DS.163k2	9
403	N2M	166 RADAR 2.1-2.6 MELTING LAYER ID 166/ML DS.166m2	9
404	N2Q	94 RADAR 2.1-2.6 REFLECTIVITY .54NM RES 256 LEVELS ID 94/DR Add No 11K 6-14/hr RPCCDS & SBN DS.p94r2	9
405	N2R	RADAR 2.4/2.5 REFLECTIVITY .54NM RES 16 LEVELS ID 19/R	9
406	N2S	RADAR 2.4/2.5 STORM REL VLCTY .54NM RES 16 LVLS ID 56/SRM	9
407	N2U	99 RADAR 2.1-2.6 VELOCITY .13NM RES 256 LEVELS ID 99/DV Add No 27K 6-14/hr RPCCDS & SBN DS.p99v2	9
408	N2V	RADAR 2.4/2.5 VELOCITY .54NM RES 16 LEVELS ID 27/V	9
409	N2X	159 RADAR 2.1-2.6 DIFF RFLCTVTY .13NM RES 256 LEVELS ID 159/DZD DS.159x2	9

410	N3C	161 RADAR 2.7-3.6 CORR CFFCNT .13NM RES 256 LEVELS ID 161/DCC DS.161c3	9
411	N3H	165 RADAR 2.7-3.6 HYDROMETEOR CLASS .13NM RES ID 165/DHC DS.165h3	9
412	N3K	163 RADAR 2.7-3.6 SPEC DIFF PHASE .13NM RES 256 LVLS ID 163/DKD DS.163k3	9
413	N3M	166 RADAR 2.7-3.6 MELTING LAYER ID 166/ML DS.166m3	9
414	N3P	RADAR 3 HOUR PRECIPITATION ACCUMULATION 79/THP	9
415	N3Q	94 RADAR 2.7-3.6 REFLECTIVITY .54NM RES 256 LEVELS ID 94/DR Add No 10K 6-14/hr RPCCDS & SBN DS.p94r3	9
416	N3R	RADAR 3.4/3.5 REFLECTIVITY .54NM RES 16 LEVELS ID 19/R	9
417	N3S	RADAR 3.4/3.5 STORM REL VLCTY .54NM RES 16 LVLS ID 56/SRM	9
418	N3U	99 RADAR 2.7-3.6 VELOCITY .13NM RES 256 LEVELS ID 99/DV Add No 23K 6-14/hr RPCCDS & SBN DS.p99v3	9
419	N3V	RADAR 3.4/3.5 VELOCITY .54NM RES 16 LEVELS ID 27/V	9
420	N3X	159 RADAR 2.7-3.6 DIFF RFLCTVTY .13NM RES 256 LEVELS ID 159/DZD DS.159x3	9
421	N6P	USER SELECTABLE PRECIPITATION 6 HOUR ACCUMULATION 31/USP	9
422	NAC	161 RADAR 0.9-1.1 CORR CFFCNT .13NM RES 256 LEVELS ID 161/DCC DS.161ca	9
423	NAK	163 RADAR 0.9-1.1 SPEC DIFF PHASE .13NM RES 256 LVLS ID 163/DKD DS.163ka	9
424	NAM	166 RADAR 0.9-1.1 MELTING LAYER ID 166/ML DS.166ma	9
425	NAQ	94 RADAR 0.9-1.1 REFLECTIVITY .54NM RES 256 LEVELS ID 94/DR Add No 16K 6-14/hr RPCCDS & SBN DS.p94ra	9
426	NAU	99 RADAR 0.9-1.1 VELOCITY .13NM RES 256 LEVELS ID 99/DV Add No 47K 6-14/hr RPCCDS & SBN DS.p99va	9
427	NAX	159 RADAR 0.9-1.1 DIFF RFLCTVTY .13NM RES 256 LEVELS ID 159/DZD DS.159xa	9
428	NBC	161 RADAR 1.7-2.0 CORR CFFCNT .13NM RES 256 LEVELS ID 161/DCC DS.161cb	9
429	NBH	165 RADAR 1.7-2.0 HYDROMETEOR CLASS .13NM RES ID 165/DHC DS.165hb	9
430	NBK	163 RADAR 1.7-2.0 SPEC DIFF PHASE .13NM RES 256 LVLS ID 163/DKD DS.163kb	9
431	NBM	166 RADAR 1.7-2.0 MELTING LAYER ID 166/ML DS.166mb	9
432	NBQ	94 RADAR 1.7-2.0 REFLECTIVITY .54NM RES 256 LEVELS ID 94/DR Add No 11K 6-14/hr RPCCDS & SBN DS.p94rb	9
433	NBU	99 RADAR 1.7-2.0 VELOCITY .13NM RES 256 LEVELS ID 99/DV Add No 29K 6-14/hr RPCCDS & SBN DS.p99vb	9
434	NBX	159 RADAR 1.7-2.0 DIFF RFLCTVTY .13NM RES 256 LEVELS ID 159/DZD DS.159xb	9
435	NC1	CLUTTER FILTER CONTROL (CFC) – SEGMENT 1	9
436	NC2	CLUTTER FILTER CONTROL (CFC) – SEGMENT 2	9
437	NC3	CLUTTER FILTER CONTROL (CFC) – SEGMENT 3	9
438	NC4	CLUTTER FILTER CONTROL (CFC) – SEGMENT 4	9
439	NC5	CLUTTER FILTER CONTROL (CFC) – SEGMENT 5	9
440	NCF	CLUTTER FILTER CONTROL	9
441	NCO	RADAR COMPOSITE REFLECTIVITY 2.2NM RES 8 LEVELS ID 36/CR	9
442	NCR	RADAR COMPOSITE REFLECTIVITY .54NM RES 16 LEVELS ID 37/CR	9
443	NCZ	RADAR COMPOSITE REFLECTIVITY 2.2NM RES 16 LEVELS ID 38/CR	9
444	NET	RADAR ECHO TOPS ID 41/ET	9
445	NHI	HAIL INDEX 59/HI	9
446	NHL	RADAR HIGH LAYER COMPOSITE REFLECTIVITY MAX ID 90/LRM	9
447	NLA	RADAR LOW LAYER COMPOSITE REFLECTIVITY AP RMVD ID 67/ARP	9

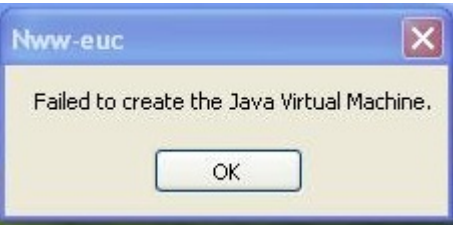
448	NLL	RADAR LOW LAYER COMPOSITE REFLECTIVITY MAX ID 65/LRM	9
449	NME	MESOCYCLONE 60/M	9
450	NML	RADAR MIDDLE LAYER COMPOSITE REFLECTIVITY MAX ID 66/LRM	9
451	NOU	Weather Reconnaissance Flights	9
452	NOX	Data Mgt Message	9
453	NSP	BASE SPECTRUM WIDTH 32NM .13NM X 1 DEG	9
454	NSS	STORM STRUCTURE 62/SS	9
455	NST	STORM TRACKING INFORMATION 58/STI	9
456	NSW	BASE SPECTRUM WIDTH 124NM .54NM X 1 DEG	9
457	NTP	RADAR STORM TOTAL PRECIPITATION ACCUMULATION 80/STP	9
458	NTV	TORNADO VORTEX SIGNATURE 61/TVS	9
459	NUP	RADAR USER SELECT PRECIPITATION ACCUMULATION 31/USP	9
460	NUW	NUCLEAR POWER PLANT WARNING	9
461	NVL	RADAR VERTICALLY INTEGRATED LIQUID ID 57/VIL	9
462	NVW	RADAR VELOCITY AZIMUTH DISPLAY WIND PROFILE 48/WVP	9
463	NWP	SEVERE WEATHER PROBABILITY 47/SWP	9
464	NWR	NOAA Weather Radio Forecast	9
465	OAV	OTHER AVIATION PRODUCTS	9
466	OBS	Observations	9
467	OCD	OCEANOGRAPHIC DATA	9
468	OEP	OPERATIONAL EVOLUTION PLAN	9
469	OFA	OFFSHORE AVIATION AREA FORECAST	9
470	OHA	169 QPE ONE HOUR ACCUMULATION 16 LEVELS ID 169/OHA DS.169oh	9
471	OSB	OCEANOGRAPHIC SPECTRAL BULLETIN	9
472	OSW	OCEAN SURFACE WINDS	9
473	OZF	Zone Forecast	9
474	PAR	PERFORMANCE ACCOMPLISHMENT REPORT	9
475	PBF	PRESCRIBED BURN FORECAST	9
476	PFW	Fire Weather Point Forecast Matrices	9
477	PIB	PIBAL OBSERVATION *	9
478	PIR	PILOT REPORT *	9
479	POE	PROBABILITY OF EXCEED	9
480	PRB	PFW	9
481	PRC	STATE PILOT REPORT COLLECTIVE	9
482	PSM	PROGNOSTIC SNOW MELT	9
483	PTA	171 QPE STORM TOTAL ACCUMULATION 16 LEVELS ID 172/DSA DS.171st	9
484	PTS	Probabilistic Outlook Points	9
485	PVM	PUBLIC VERIFICATION MATRIX	9
486	PWS	Tropical Cyclone Probabilities	9
487	QCD	ASOS DAILY QUALITY CONTROL MESSAGE	9
488	QCH	ASOS HOURLY QUALITY CONTROL MESSAGE	9
489	QCM	ASOS MONTHLY QUALITY CONTROL MESSAGE	9
490	QCW	ASOS WEEKLY QUALITY CONTROL MESSAGE	9
491	QPF	QUANTITATIVE PRECIPITATION FORECAST	9
492	RBG	RED BOOK GRAPHIC **	9
493	RDG	REVISED DIGITAL GUIDANCE	9
494	RFI	RFI Observation	9

495	RFR	ROUTE FORECAST	9
496	RHW	RADIOLOGICAL HAZARD WARNING	9
497	RRC	SCS MANUAL SNOW COURSE DATA	9
498	RRS	SPECIAL AUTOMATED HYDROMET DATA REPORT	9
499	RRX	ASOS SHEF PRECIPITATION CRITERIA TEST MESSAGE	9
500	RRY	ASOS SHEF HOURLY ROUTINE TEST MESSAGE	9
501	RSD	DAILY SNOTEL DATA	9
502	RSL	WSR-88D RPG SYSTEM STATUS LOGS	9
503	RSM	MONTHLY SNOTEL DATA	9
504	RVD	DAILY RIVER FORECASTS	9
505	RWO	RADAR SUPEROB	9
506	RZF	REGIONAL ZONE FORECAST	9
507	SAA	SPACE ENVIRONMENT ALERT ADVISORY	9
508	SAG	SNOW AVALANCHE GUIDANCE	9
509	SAM	MONTHLY SURFACE AVIATION WEATHER SUMMARY	9
510	SCN	SOIL CLIMATE ANALYSIS NETWORK DATA	9
511	SCV	SATELLITE AREAL EXTENT OF SNOW COVER	9
512	SEL	SEVERE LOCAL STORM WATCH AND WATCH CANCELLATION MSG	9
513	SES	SPACE ENVIRONMENT SUMMARY	9
514	SEV	SPC WATCH POINT INFORMATION MESSAGE	9
515	SFT	TABULAR STATE FORECAST	9
516	SGW	PLAIN LANGUAGE SIGNIFICANT WEATHER FORECAST	9
517	SHI	SFC SHIP REPORT AT INTERMEDIATE SYNOPTIC TIME *	9
518	SHN	SURFACE SHIP REPORT AT NON-SYNOPTIC TIME *	9
519	SHP	SURFACE SHIP REPORT AT SYNOPTIC TIME *	9
520	SMA	MARINE SUBTROPICAL STORM ADVISORY	9
521	SOO	SOO Product	9
522	SPD	SUPPLEMENTAL PRECIPITATION 82/SPD	9
523	SPE	SATELLITE PRECIPITATION ESTIMATES (TXUS20 KWBC)	9
524	SPW	SHELTER IN PLAcE WARNING	9
525	SRF	SURF FORECAST	9
526	SRG	Soaring Guidance	9
527	SSA	SPACE ENVIRONMENT SUMMARY ADVISORY	9
528	SSI	INTERMEDIATE SYNOPTIC HOUR SURFACE OBSERVATION *	9
529	SSM	MAIN SYNOPTIC HOUR SURFACE OBSERVATION *	9
530	SSN	NON STANDARD SYNOPTIC HOUR SURFACE OBSERVATION *	9
531	STA	NETWORK AND SEVERE WEATHER STATISTICAL SUMMARIES	9
532	STD	SATELLITE TROPICAL DISTURBANCE RAINFALL ESTIMATES	9
533	STQ	SPOT FORECAST REQUEST	9
534	SUM	Space Weather Message	9
535	SWD	SPACE ENVIRONMENT WARNING ADVISORY	9
536	SWE	ESTIMATED SNOW WATER EQUIVALENT BY BASIN	9
537	SYN	Regional Weather Synopsis	9
538	TAP	TERMINAL ALERTING PRODUCTS (AFOS LOCAL USE ONLY)	9
539	TCA	TROPICAL CYCLONE ADVISORY	9
540	TCS	SATELLITE TROPICAL CYCLONE SUMMARY	9
541	TIB	TSUNAMI INFORMATION BULLETIN	9

542	TLS	TSUNAMI LOCAL STATEMENT	9
543	TOE	911 TELEPHONE OUTAGE EMERGENCY	9
544	TVL	TRAVELERS FORECAST	9
545	UJX	JSC UPPER AIR SOUNDINGS	9
546	ULG	UPPER AIR SITE PERFORMANCE & LOGISTICS MESSAGE	9
547	URN	Aircraft Reconnaissance	9
548	VAA	VOLCANIC ACTIVITY ADVISORY	9
549	VER	FORECAST VERIFICATION STATISTICS	9
550	VGP	VECTOR GRAPHIC **	9
551	VOW	VOLCANO WARNING	9
552	WA0	AIRMET (PACIFIC)	9
553	WA1	AIRMET (NORTHEAST U.S.)	9
554	WA2	AIRMET (SOUTHEAST U.S.)	9
555	WA3	AIRMET (NORTH CENTRAL U.S.)	9
556	WA4	AIRMET (SOUTH CENTRAL U.S.)	9
557	WA5	AIRMET (U.S. ROCKY MOUNTAINS)	9
558	WA6	AIRMET (U.S. WEST COAST)	9
559	WA7	AIRMET (JUNEAU, ALASKA)	9
560	WA8	AIRMET (ANCHORAGE, ALASKA)	9
561	WA9	AIRMET (FAIRBANKS, ALASKA)	9
562	WAC	AIRMET (CARIBBEAN)	9
563	WCL	WATCH CLEARANCE MESSAGE	9
564	WDU	Warning Decision Update	9
565	WPD	WIND PROFILER DATA (BUFR CODE) **	9
566	WS1	SIGMET (NORTHEAST U.S.)	9
567	WS2	SIGMET (SOUTHEAST U.S.)	9
568	WS3	SIGMET (NORTH CENTRAL U.S.)	9
569	WS4	SIGMET (SOUTH CENTRAL U.S.)	9
570	WS5	SIGMET (U.S. ROCKY MOUNTAINS)	9
571	WS6	SIGMET (U.S. WEST COAST)	9
572	WS7	SIGMET (JUNEAU, ALASKA)	9
573	WS8	SIGMET (ANCHORAGE, ALASKA)	9
574	WS9	SIGMET (FAIRBANKS, ALASKA)	9
575	WSV	VOLCANIC ACTIVITY SIGMET	9
576	WTS	WARNING TEST MESSAGE FROM NCF	9
577	WVM	WARNING VERIFICATION MESSAGE	9

7 Appendix C - Troubleshooting

	Error	Solution
1	NWW-EUC application will not run when the nww-euc.exe file is double-clicked. The following message error might be	This error is usually generated for lack of system resources due to the inability of the Windows OS to allocate

	<p>displayed:</p> 	<p>contiguous RAM on a particular workstation.</p> <p>Follow these steps to fix it:</p> <ul style="list-style-type: none"> -Close NWW-EUC windows -Open file <installDirectory>\nww-euc-0.0.6a\nww-euc\nww-euc.ini -Locate and change the value for max heap size to allocate by changing -Xmx1536m to -Xmx1024m. -Close the file and run the nww-euc.exe file again.