



SUSITNA-WATANA HYDRO

Clean, reliable energy for the next 100 years.

**Report
14-07-REP – Appendix C
v0.0**

**Susitna-Watana Hydroelectric Project
Site-Specific Probable Maximum Precipitation Study
Appendix C – Short List Storm Analyses**

DRAFT

AEA11-022



Prepared for:
Alaska Energy Authority
813 West Northern Lights Blvd.
Anchorage, AK 99503

Prepared by:
**Applied Weather Associates,
LLC for MWH**
PO Box 175
Monument, CO 80132

March 14, 2014

DRAFT

Disclaimer

This document was prepared for the exclusive use of AEA and MWH as part of the engineering studies for the Susitna-Watana Hydroelectric Project, FERC Project No. 14241, and contains information from MWH which may be confidential or proprietary. Any unauthorized use of the information contained herein is strictly prohibited and MWH shall not be liable for any use outside the intended and approved purpose.

Notice

This report was prepared by Applied Weather Associates, LLC (AWA). The results and conclusions in this report are based upon best professional judgment using currently available data. Therefore, neither AWA nor any person acting on behalf of AWA can: (a) make any warranty, expressed or implied, regarding future use of any information or method in this report, or (b) assume any future liability regarding use of any information or method contained in this report.

**APPENDIX C:
SHORT STORM LIST STORM ANALYSES**

Storm files were made for 13 SPAS DAD zones which comprised the short storm list (Table C.1). Applied Weather Associates (AWA) analyzed each of these storms to determine the storm representative SST for in-place maximization using the updated SST climatologies. Each storm was then transpositioned and adjusted using the OTF process as description in Section 7 and 8 of the report. The data used to analyze and develop the adjusted DAD table for each of these storms is included in this appendix so that a user is able to understand how each of the storms was adjusted and allow for the process to replicated/reproduced if required.

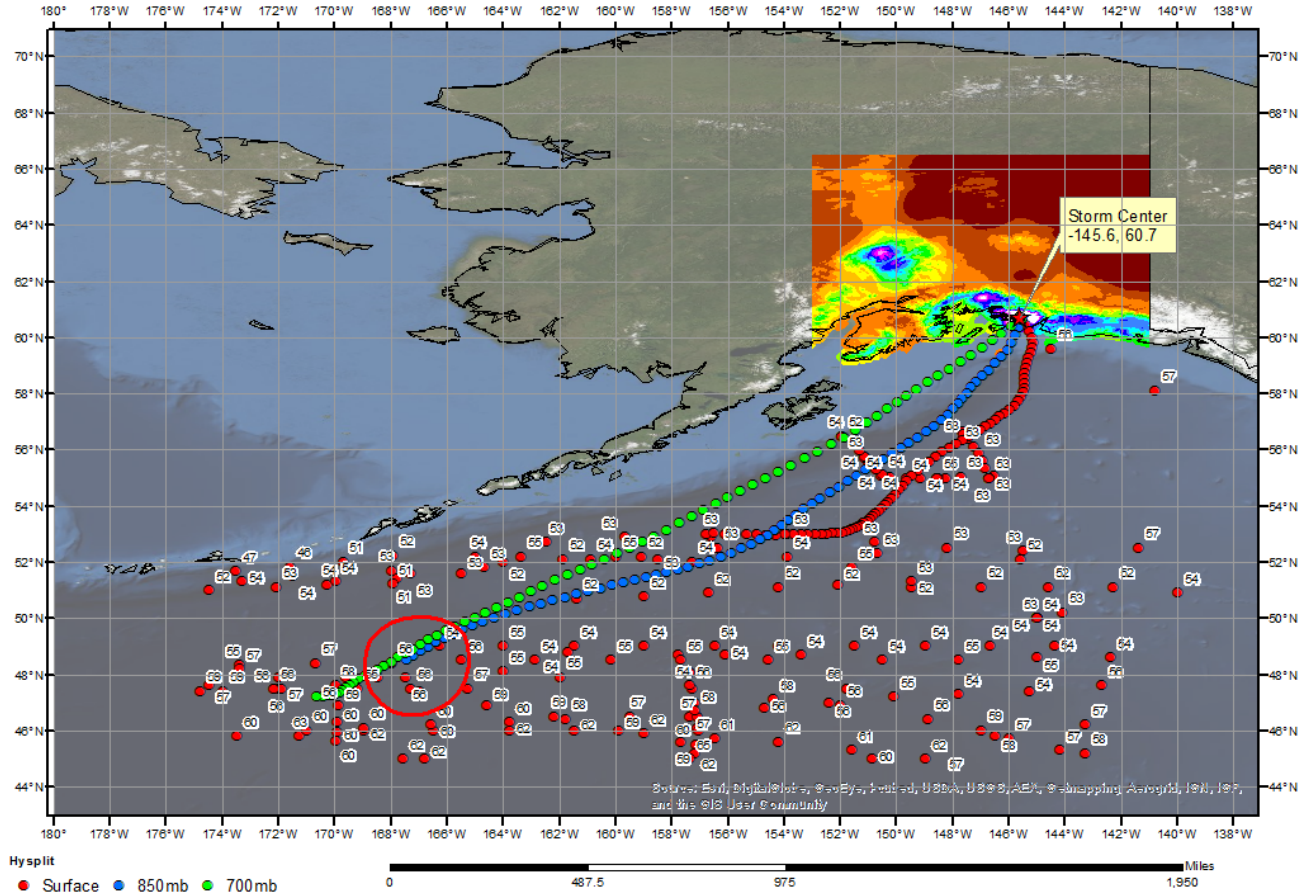
Table C.1. Alaska Short Storm List

Name	ST	Lat	Lon	Year	Mon	Day	Total Rainfall	Precipitation Source
DENALI NP	AK	63.038	-150.471	1955	8	22	13.75	SPAS 1272 Zone 1
MT SPURR	AK	61.346	-152.329	1958	7	25	6.62	SPAS 1273 Zone 1
LITTLE SUSITNA	AK	61.854	-149.229	1959	8	18	13.05	SPAS 1271 Zone 1
DENALI NP	AK	62.846	-150.513	1967	8	2	12.45	SPAS 1270 Zone 2
FAIRBANKS	AK	65.521	-147.329	1967	8	2	12.45	SPAS 1270 Zone 1
SUTTON	AK	61.904	-148.863	1971	8	5	11.39	SPAS 1269 Zone 1
BLACK RAPIDS	AK	63.471	-145.479	1971	8	5	12.17	SPAS 1269 Zone 2
MT GEIST	AK	63.638	-146.971	1980	7	24	5.26	SPAS 1268 Zone 2
DENALI NP	AK	62.954	-150.079	1980	7	24	7.33	SPAS 1268 Zone 1
DENALI NP	AK	62.829	-151.138	1986	10	8	11.01	SPAS 1267 Zone 1
SEWARD	AK	60.113	-149.513	1986	10	8	20.80	SPAS 1267 Zone 2
BLACK RAPIDS	AK	63.465	-145.685	2006	8	17	16.12	SPAS 1303 Zone 1
OLD TYONEK	AK	61.260	-151.860	2012	9	15	15.91	SPAS 1256 Zone 1

Denali NP, AK, SPAS 1272 Zone 1
August 22, 1955

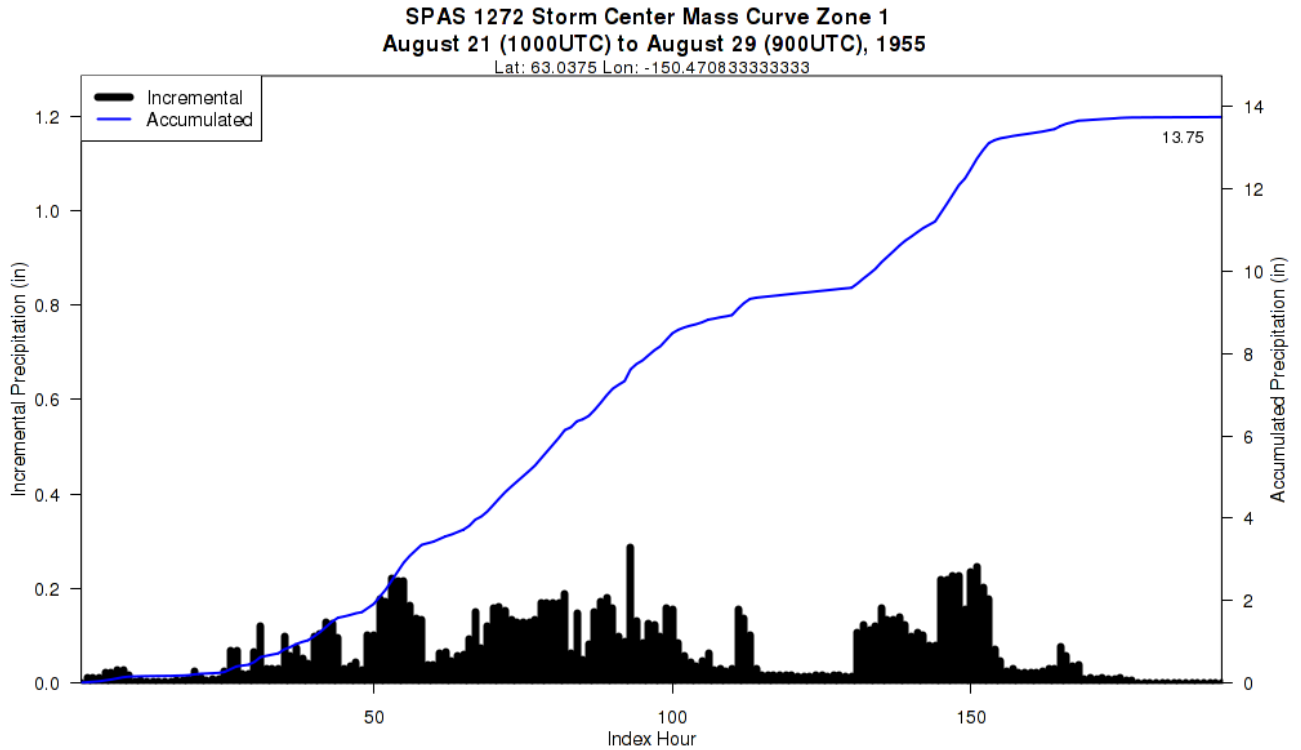
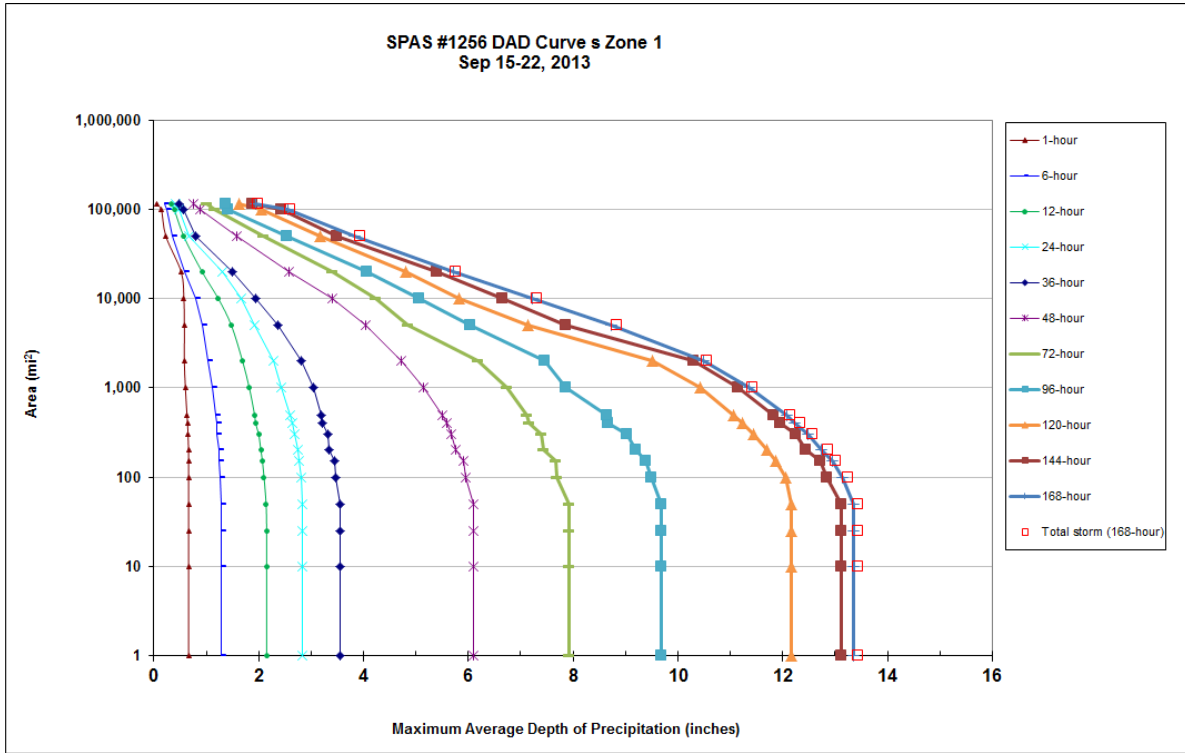
Storm Name: SPAS 1272 Denali NP, DAD Zone 1		Storm Adjustment for Susitna-Watana								
Storm Date: 8/21-29/1955										
AWA Analysis Date: 2/19/2013										
Temporal Transposition Date 15-Aug										
Lat Long		Moisture Inflow Direction: SSW @ 700 miles								
Storm center location	63.04 N 150.47 W	Basin Elevation	3,650 feet							
Storm Rep SST location	53.00 N 152.00 W	Storm Elevation	7,500 feet							
Transposition SST location	NA NA	Storm Duration	24 hours							
Basin location	62.84 N 147.37 W	Effective Barrier Height	1,483 feet							
The storm representative SST is 54.0 F		with total precipitable water above sea level of 1.02 inches.								
The in-place maximum SST is 57.0 F		with total precipitable water above sea level of 1.19 inches.								
The transpositioned maximum SST is NA		with total precipitable water above sea level of 4.44 inches.								
The in-place storm elevation is 7,500		which subtracts 0.67 inches of precipitable water at 54.0 F								
The in-place storm elevation is 7,500		which subtracts 0.76 inches of precipitable water at 57.0 F								
The transposition storm elevation is 3,650		which subtracts xx inches of precipitable water at NA								
The moisture inflow barrier height is 1,483		which subtracts xx inches of precipitable water at NA								
The in-place maximization factor is 1.23		Notes: Storm representative SST value was based on SST values for August 21-22, 1955 along HYSPLIT trajectory data. Values were selected in region where temperature did not vary more than a 1-degree over a large area.								
The transposition/elevation factor is #VALUE!										
The barrier adjustment factor is #VALUE!										
The total adjustment factor is #VALUE!										
Observed Storm Depth-Area-Duration										
	6 Hours	12 Hours	24 Hours	36 Hours	48 Hours	72 Hours	96 Hours	120 Hours	144 Hours	168 Hours
10 sq miles	1.3	2.2	2.8	3.6	6.1	7.9	9.7	12.2	13.1	13.4
100 sq miles	1.3	2.1	2.8	3.5	6.0	7.7	9.5	12.1	12.9	13.1
200 sq miles	1.2	2.0	2.7	3.4	5.8	7.4	9.2	11.7	12.4	12.7
500 sq miles	1.2	1.9	2.6	3.2	5.5	7.1	8.7	11.1	11.8	12.1
1000 sq miles	1.1	1.8	2.4	3.1	5.2	6.7	7.9	10.4	11.2	11.4
2000 sq miles	1.0	1.7	2.3	2.8	4.7	6.2	7.5	9.5	10.3	10.5
5000 sq miles	0.9	1.5	1.9	2.4	4.0	4.8	6.0	7.1	7.9	8.7
10000 sq miles	0.8	1.2	1.7	2.0	3.4	4.2	5.1	5.8	6.7	7.2
20000 sq miles	0.6	0.9	1.3	1.5	2.6	3.4	4.1	4.8	5.4	5.7
Adjusted Storm Depth-Area-Duration										
	6 Hours	12 Hours	24 Hours	36 Hours	48 Hours	72 Hours	96 Hours	120 Hours	144 Hours	168 Hours
10 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
100 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
200 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
500 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
1000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
2000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
5000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
10000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
20000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Storm or Storm Center Name		SPAS 1272 Denali NP, DAD Zone 1								
Storm Date(s)		8/21-29/1955								
Storm Type		Atmospheric River								
Storm Location		63.04 N 150.47 W								
Storm Center Elevation		7500								
Precipitation Total & Duration		13.75 inches in 168 hours -DAD Zone 1								
Storm Representative SST		54.0 F								
Storm Representative SST Location		53.00 N 152.00 W						15-Aug		
In-place Maximum SST		57.0 F						57		
Moisture Inflow Vector		SSW @ 700								
In-place Maximization Factor		1.23								
Temporal Transposition (Date)		15-Aug								
Transposition SST Location		NA NA								
Transposition Maximum SST		NA								
Transposition Adjustment Factor		#VALUE!								
Average Basin Elevation		3,650								
Highest Elevation in Basin		13,131								
Inflow Barrier Height		1,483								
Elevation Adjustment Factor		#VALUE!								
Total Adjustment Factor		#VALUE!								

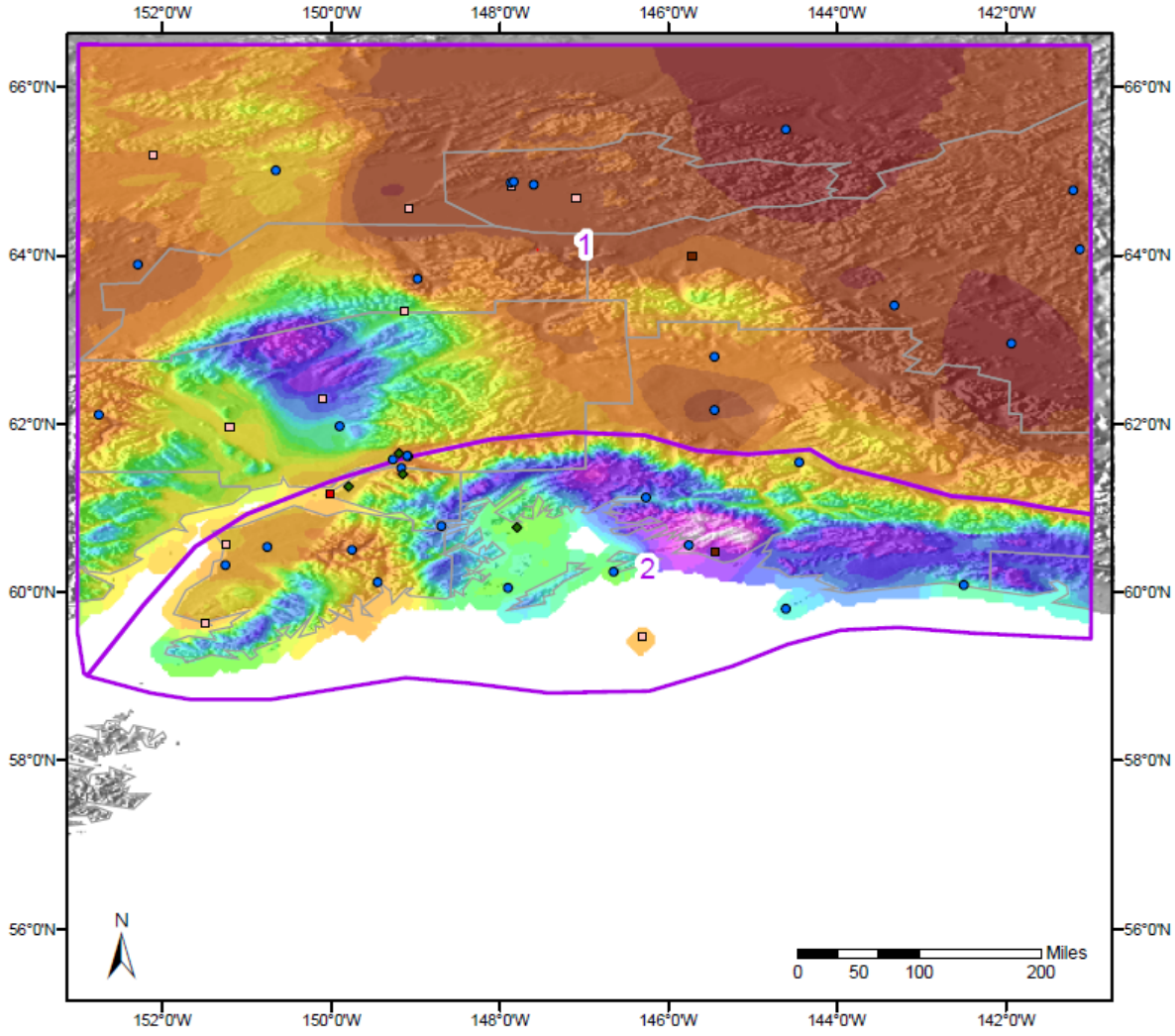
SPAS 1272 Cordova, AK Storm Analysis
August 21 - 29, 1955



Storm 1272 - Aug. 21 (1000 UTC) - Aug. 28 (0900 UTC), 1955
MAXIMUM AVERAGE DEPTH OF PRECIPITATION (INCHES)

Area (mi ²)	Duration (hours)											
	1	6	12	24	36	48	72	96	120	144	168	Total
0.2	0.71	1.32	2.18	2.94	3.63	6.27	8.14	9.92	12.48	13.42	13.67	13.75
1	0.66	1.29	2.15	2.83	3.55	6.09	7.92	9.68	12.16	13.12	13.35	13.43
10	0.66	1.29	2.15	2.83	3.55	6.09	7.92	9.68	12.16	13.12	13.35	13.43
25	0.66	1.29	2.15	2.83	3.55	6.09	7.92	9.68	12.16	13.12	13.35	13.43
50	0.66	1.29	2.14	2.83	3.55	6.09	7.92	9.68	12.16	13.12	13.35	13.43
100	0.66	1.27	2.1	2.82	3.46	5.95	7.7	9.5	12.06	12.85	13.14	13.25
150	0.66	1.25	2.07	2.78	3.44	5.9	7.67	9.39	11.86	12.71	12.94	13.01
200	0.66	1.24	2.04	2.74	3.35	5.76	7.44	9.19	11.7	12.44	12.73	12.86
300	0.65	1.21	2	2.69	3.32	5.68	7.39	9.02	11.45	12.25	12.49	12.57
400	0.64	1.19	1.94	2.65	3.22	5.6	7.15	8.66	11.23	11.95	12.22	12.34
500	0.63	1.18	1.92	2.61	3.2	5.51	7.11	8.65	11.07	11.83	12.07	12.15
1,000	0.6	1.11	1.82	2.43	3.05	5.15	6.74	7.86	10.42	11.15	11.36	11.42
2,000	0.58	1.04	1.69	2.29	2.82	4.73	6.18	7.45	9.51	10.29	10.48	10.56
5,000	0.58	0.92	1.48	1.93	2.37	4.04	4.84	6.03	7.14	7.85	8.72	8.83
10,000	0.57	0.79	1.23	1.66	1.95	3.4	4.23	5.05	5.82	6.65	7.22	7.31
20,000	0.52	0.59	0.92	1.3	1.5	2.57	3.41	4.07	4.8	5.4	5.71	5.77
50,000	0.23	0.35	0.57	0.68	0.8	1.59	2.1	2.54	3.17	3.49	3.82	3.94
100,000	0.14	0.24	0.39	0.49	0.56	0.89	1.15	1.41	2.04	2.44	2.56	2.60
116,206	0.05	0.21	0.34	0.42	0.49	0.75	1	1.37	1.62	1.87	1.95	1.98





Total Storm (192-hour) Precipitation (inches)
August 21-28, 1955
SPAS #1272

Precipitation (inches)

0.12 - 0.50	3.01 - 3.50	6.01 - 6.50	12.01 - 14.00	● Daily
0.51 - 1.00	3.51 - 4.00	6.51 - 7.00	14.01 - 16.00	■ Hourly
1.01 - 1.50	4.01 - 4.50	7.01 - 8.00	16.01 - 18.00	□ Hourly Est.
1.51 - 2.00	4.51 - 5.00	8.01 - 9.00	18.01 - 20.00	■ Hourly Est. Pseudo
2.01 - 2.50	5.01 - 5.50	9.01 - 10.00	20.01 - 22.00	◆ Supplemental
2.51 - 3.00	5.51 - 6.00	10.01 - 12.00		

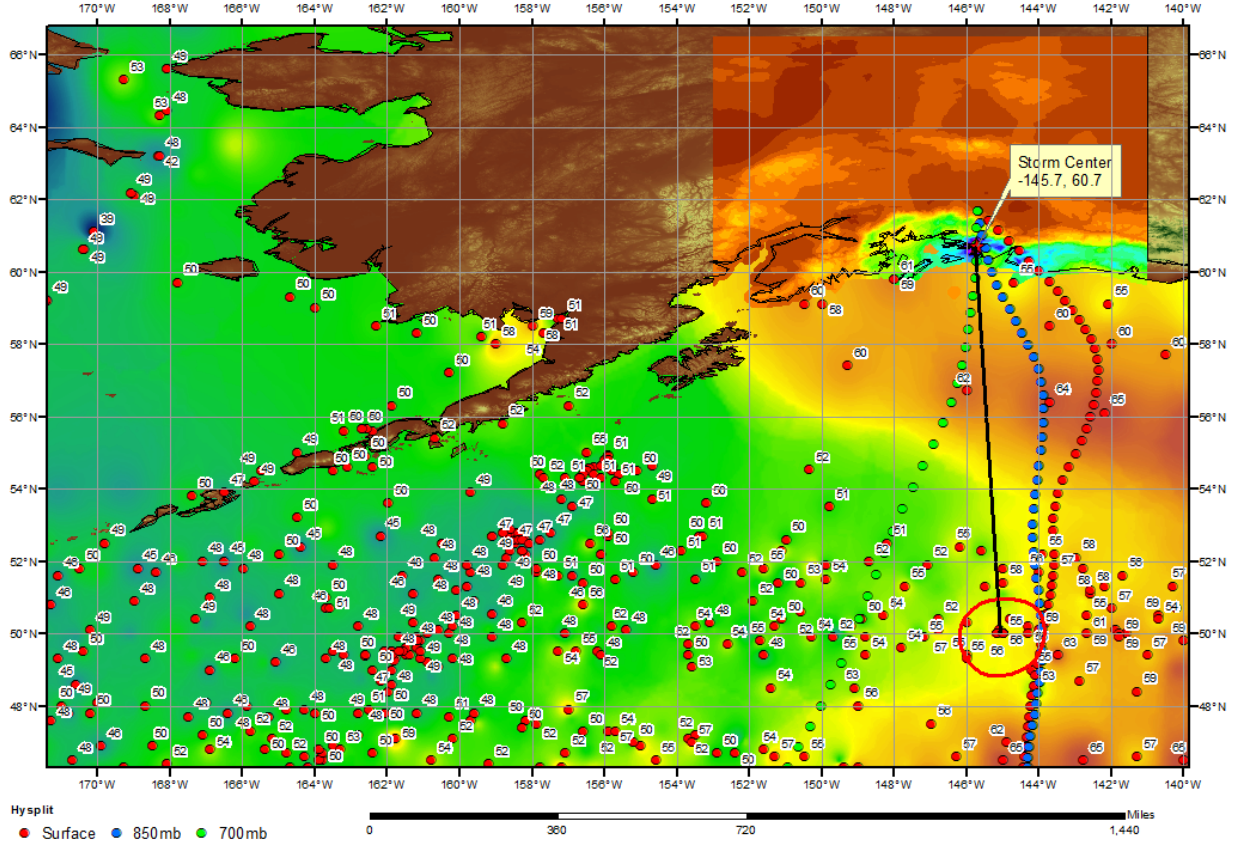


METSTAT, Inc. 02/28/2013

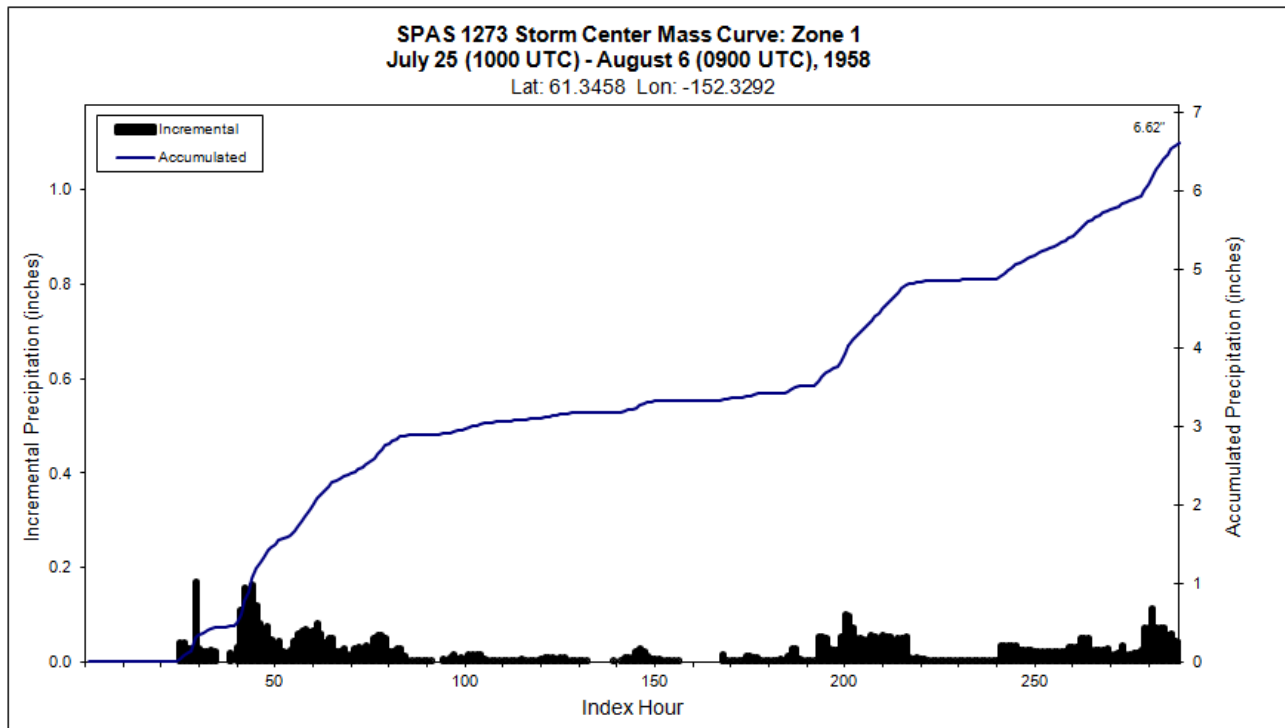
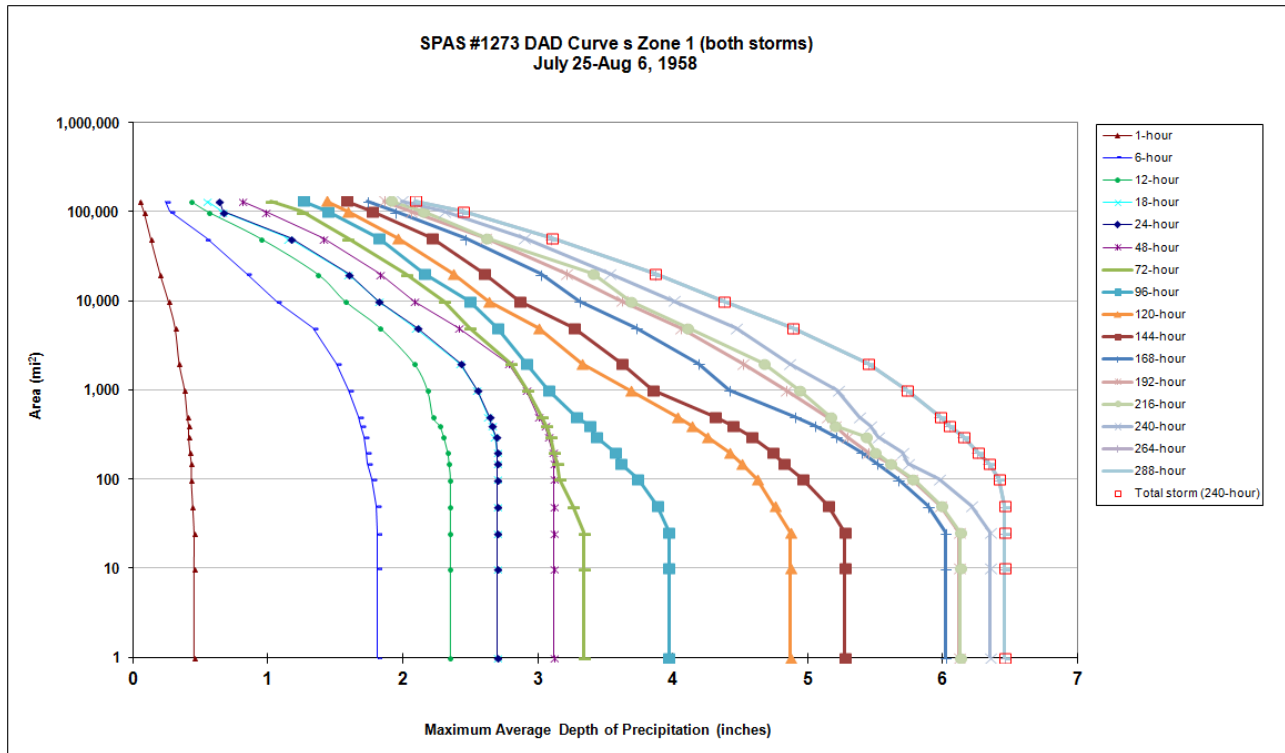
Mt. Spurr, AK, SPAS 1273 Zone 1
July 25, 1958

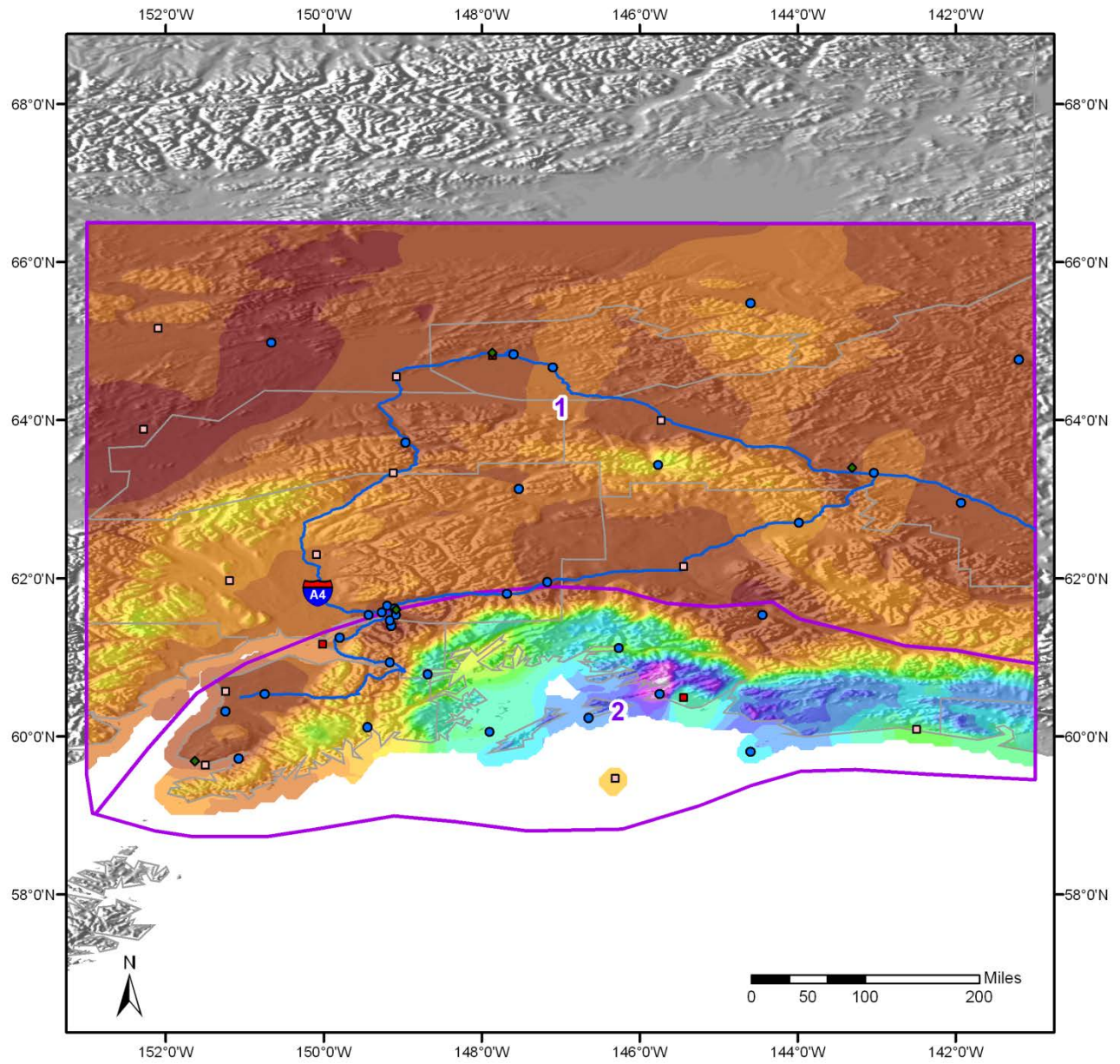
Storm Name: SPAS 1273-AK Storm 1 and 2, Zone 1		Storm Adjustment for Susitna-Watana																																																																																	
Storm Date: July 25 - August 5, 1958																																																																																			
AWA Analysis Date: 3/4/2014																																																																																			
Temporal Transposition Date 15-Aug																																																																																			
<table border="1"> <tr> <td>Lat</td> <td>Long</td> </tr> <tr> <td>61.35 N</td> <td>152.33 W</td> </tr> <tr> <td>50.00 N</td> <td>145.00 W</td> </tr> <tr> <td>NA</td> <td>NA</td> </tr> <tr> <td>*</td> <td>*</td> </tr> </table>		Lat	Long	61.35 N	152.33 W	50.00 N	145.00 W	NA	NA	*	*	<table border="1"> <tr> <td>Moisture Inflow Direction</td> <td>SSE @ 830</td> <td>miles</td> </tr> <tr> <td>Basin Average Elevation</td> <td>NA</td> <td>feet</td> </tr> <tr> <td>Storm Center Elevation</td> <td>9,200</td> <td>feet</td> </tr> <tr> <td>Storm Analysis Duration</td> <td>24</td> <td>hours</td> </tr> <tr> <td>Effective Barrier Height</td> <td>N/A</td> <td>feet</td> </tr> </table>		Moisture Inflow Direction	SSE @ 830	miles	Basin Average Elevation	NA	feet	Storm Center Elevation	9,200	feet	Storm Analysis Duration	24	hours	Effective Barrier Height	N/A	feet																																																							
Lat	Long																																																																																		
61.35 N	152.33 W																																																																																		
50.00 N	145.00 W																																																																																		
NA	NA																																																																																		
*	*																																																																																		
Moisture Inflow Direction	SSE @ 830	miles																																																																																	
Basin Average Elevation	NA	feet																																																																																	
Storm Center Elevation	9,200	feet																																																																																	
Storm Analysis Duration	24	hours																																																																																	
Effective Barrier Height	N/A	feet																																																																																	
<table border="1"> <tr> <td>The storm representative SST is</td> <td>56.0 F</td> <td>with total precipitable water above sea level of</td> <td>1.11</td> <td>inches.</td> </tr> <tr> <td>The in-place maximum SST is</td> <td>59.0 F</td> <td>with total precipitable water above sea level of</td> <td>1.31</td> <td>inches.</td> </tr> <tr> <td>The transpositioned maximum SST is</td> <td>NA</td> <td>with total precipitable water above sea level of</td> <td>4.08</td> <td>inches.</td> </tr> <tr> <td>The in-place storm elevation is</td> <td>9,200</td> <td>feet which subtracts</td> <td>0.83</td> <td>inches of precipitable water at 56.0 F</td> </tr> <tr> <td>The in-place storm elevation is</td> <td>9,200</td> <td>feet which subtracts</td> <td>0.97</td> <td>inches of precipitable water at 59.0 F</td> </tr> <tr> <td>The transposition storm elevation at</td> <td>NA</td> <td>feet which subtracts</td> <td>NA</td> <td>inches of precipitable water at NA</td> </tr> <tr> <td>The moisture inflow barrier height is</td> <td>N/A</td> <td>feet which subtracts</td> <td>NA</td> <td>inches of precipitable water at NA</td> </tr> </table>				The storm representative SST is	56.0 F	with total precipitable water above sea level of	1.11	inches.	The in-place maximum SST is	59.0 F	with total precipitable water above sea level of	1.31	inches.	The transpositioned maximum SST is	NA	with total precipitable water above sea level of	4.08	inches.	The in-place storm elevation is	9,200	feet which subtracts	0.83	inches of precipitable water at 56.0 F	The in-place storm elevation is	9,200	feet which subtracts	0.97	inches of precipitable water at 59.0 F	The transposition storm elevation at	NA	feet which subtracts	NA	inches of precipitable water at NA	The moisture inflow barrier height is	N/A	feet which subtracts	NA	inches of precipitable water at NA																																													
The storm representative SST is	56.0 F	with total precipitable water above sea level of	1.11	inches.																																																																															
The in-place maximum SST is	59.0 F	with total precipitable water above sea level of	1.31	inches.																																																																															
The transpositioned maximum SST is	NA	with total precipitable water above sea level of	4.08	inches.																																																																															
The in-place storm elevation is	9,200	feet which subtracts	0.83	inches of precipitable water at 56.0 F																																																																															
The in-place storm elevation is	9,200	feet which subtracts	0.97	inches of precipitable water at 59.0 F																																																																															
The transposition storm elevation at	NA	feet which subtracts	NA	inches of precipitable water at NA																																																																															
The moisture inflow barrier height is	N/A	feet which subtracts	NA	inches of precipitable water at NA																																																																															
<table border="1"> <tr> <td>The in-place maximization factor is</td> <td>1.21</td> </tr> <tr> <td>The transposition factor is</td> <td>#VALUE!</td> </tr> <tr> <td>The elevation barrier adjustment factor is</td> <td>#VALUE!</td> </tr> <tr> <td>The total adjustment factor is</td> <td>#VALUE!</td> </tr> </table>		The in-place maximization factor is	1.21	The transposition factor is	#VALUE!	The elevation barrier adjustment factor is	#VALUE!	The total adjustment factor is	#VALUE!	<p>Notes: Storm representative SST value was based on SST values for July 26-August 2 along the surface HYSPLIT trajectory data. Values were selected in region where temperature did not vary more than a 1-degree over a large area and was as closest to the storm center.</p>																																																																									
The in-place maximization factor is	1.21																																																																																		
The transposition factor is	#VALUE!																																																																																		
The elevation barrier adjustment factor is	#VALUE!																																																																																		
The total adjustment factor is	#VALUE!																																																																																		
Observed Storm Depth-Area-Duration																																																																																			
	1 Hours	6 Hours	12 Hours	18 Hours	24 Hours	48 Hours	72 Hours	96 Hours	120 Hours	144 Hours	168 Hours	192 Hours	216 Hours	240 Hours	264 Hours	288 Hours																																																																			
1 sq miles	0.5	1.8	2.4	2.7	2.7	3.1	3.3	4.0	4.9	5.3	6.0	6.1	6.1	6.4	6.5	6.5																																																																			
10 sq miles	0.5	1.8	2.4	2.7	2.7	3.1	3.3	4.0	4.9	5.3	6.0	6.1	6.1	6.4	6.5	6.5																																																																			
100 sq miles	0.4	1.8	2.4	2.7	2.7	3.1	3.2	3.7	4.6	5.0	5.7	5.8	5.8	6.0	6.4	6.4																																																																			
200 sq miles	0.4	1.7	2.3	2.7	2.7	3.1	3.1	3.6	4.4	4.7	5.4	5.5	5.5	5.7	6.2	6.3																																																																			
500 sq miles	0.4	1.7	2.2	2.6	2.6	3.0	3.0	3.3	4.0	4.3	4.9	5.1	5.2	5.4	5.9	6.0																																																																			
1000 sq miles	0.4	1.6	2.2	2.6	2.6	2.9	2.9	3.1	3.7	3.9	4.4	4.8	4.9	5.2	5.7	5.7																																																																			
2000 sq miles	0.3	1.5	2.1	2.4	2.4	2.8	2.8	2.9	3.3	3.6	4.2	4.5	4.7	4.9	5.4	5.5																																																																			
5000 sq miles	0.3	1.3	1.8	2.1	2.1	2.4	2.5	2.7	3.0	3.3	3.7	4.1	4.1	4.5	4.9	4.9																																																																			
10000 sq miles	0.3	1.1	1.6	1.8	1.8	2.1	2.3	2.5	2.6	2.9	3.3	3.6	3.7	4.0	4.4	4.4																																																																			
20000 sq miles	0.2	0.8	1.4	1.6	1.6	1.8	2.0	2.2	2.4	2.6	3.0	3.2	3.4	3.5	3.8	3.9																																																																			
Adjusted Storm Depth-Area-Duration																																																																																			
	1 Hours	6 Hours	12 Hours	18 Hours	24 Hours	48 Hours	72 Hours	96 Hours	120 Hours	144 Hours	168 Hours	192 Hours	216 Hours	240 Hours	264 Hours	288 Hours																																																																			
1 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!																																																																			
10 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!																																																																			
100 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!																																																																			
200 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!																																																																			
500 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!																																																																			
1000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!																																																																			
2000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!																																																																			
5000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!																																																																			
10000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!																																																																			
20000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!																																																																			
<table border="1"> <tr> <td>Storm or Storm Center Name</td> <td colspan="3">SPAS 1273-AK Storm 1 and 2, Zone 1</td> </tr> <tr> <td>Storm Date(s)</td> <td colspan="3">July 25 - August 5, 1958</td> </tr> <tr> <td>Storm Type</td> <td colspan="3">Series of low pressure systems</td> </tr> <tr> <td>Storm Location</td> <td>61.35 N</td> <td colspan="2">152.33 W</td> </tr> <tr> <td>Storm Center Elevation</td> <td colspan="3">9,200</td> </tr> <tr> <td>Precipitation Total & Duration (10 sq mi)</td> <td colspan="3">6.62 inches at 288 hours</td> </tr> <tr> <td>Storm Representative SST</td> <td colspan="3">56.0 F</td> </tr> <tr> <td>Storm Representative SST Location</td> <td>50.00 N</td> <td colspan="2">145.00 W</td> </tr> <tr> <td>Maximum SST</td> <td colspan="3">59.0 F</td> </tr> <tr> <td>Moisture Inflow Vector</td> <td colspan="3">SSE @ 830</td> </tr> <tr> <td>In-place Maximization Factor</td> <td colspan="3">1.21</td> </tr> <tr> <td>Temporal Transposition (Date)</td> <td colspan="3">15-Aug</td> </tr> <tr> <td>Transposition SST Location</td> <td>NA</td> <td colspan="2">NA</td> </tr> <tr> <td>Transposition Maximum SST</td> <td colspan="3">NA</td> </tr> <tr> <td>Transposition Adjustment Factor</td> <td colspan="3">#VALUE!</td> </tr> <tr> <td>Average Basin Elevation</td> <td colspan="3">NA</td> </tr> <tr> <td>Highest Elevation in Basin</td> <td colspan="3">NA</td> </tr> <tr> <td>Inflow Barrier Height</td> <td colspan="3">N/A</td> </tr> <tr> <td>Elevation Adjustment Factor</td> <td colspan="3">#VALUE!</td> </tr> <tr> <td>Total Adjustment Factor</td> <td colspan="3">#VALUE!</td> </tr> </table>				Storm or Storm Center Name	SPAS 1273-AK Storm 1 and 2, Zone 1			Storm Date(s)	July 25 - August 5, 1958			Storm Type	Series of low pressure systems			Storm Location	61.35 N	152.33 W		Storm Center Elevation	9,200			Precipitation Total & Duration (10 sq mi)	6.62 inches at 288 hours			Storm Representative SST	56.0 F			Storm Representative SST Location	50.00 N	145.00 W		Maximum SST	59.0 F			Moisture Inflow Vector	SSE @ 830			In-place Maximization Factor	1.21			Temporal Transposition (Date)	15-Aug			Transposition SST Location	NA	NA		Transposition Maximum SST	NA			Transposition Adjustment Factor	#VALUE!			Average Basin Elevation	NA			Highest Elevation in Basin	NA			Inflow Barrier Height	N/A			Elevation Adjustment Factor	#VALUE!			Total Adjustment Factor	#VALUE!		
Storm or Storm Center Name	SPAS 1273-AK Storm 1 and 2, Zone 1																																																																																		
Storm Date(s)	July 25 - August 5, 1958																																																																																		
Storm Type	Series of low pressure systems																																																																																		
Storm Location	61.35 N	152.33 W																																																																																	
Storm Center Elevation	9,200																																																																																		
Precipitation Total & Duration (10 sq mi)	6.62 inches at 288 hours																																																																																		
Storm Representative SST	56.0 F																																																																																		
Storm Representative SST Location	50.00 N	145.00 W																																																																																	
Maximum SST	59.0 F																																																																																		
Moisture Inflow Vector	SSE @ 830																																																																																		
In-place Maximization Factor	1.21																																																																																		
Temporal Transposition (Date)	15-Aug																																																																																		
Transposition SST Location	NA	NA																																																																																	
Transposition Maximum SST	NA																																																																																		
Transposition Adjustment Factor	#VALUE!																																																																																		
Average Basin Elevation	NA																																																																																		
Highest Elevation in Basin	NA																																																																																		
Inflow Barrier Height	N/A																																																																																		
Elevation Adjustment Factor	#VALUE!																																																																																		
Total Adjustment Factor	#VALUE!																																																																																		

SPAS 1273 South-central AK Storm Analysis
 July 26 - August 2, 1958



Storm 1273 - Jul. 25 (1000 UTC) - Aug. 6 (0900 UTC), 1958																	
MAXIMUM AVERAGE DEPTH OF PRECIPITATION (INCHES)																	
Area (mi ²)	Duration (hours)																Total
	1	6	12	18	24	48	72	96	120	144	168	192	216	240	264	288	
0.2	0.45	1.84	2.41	2.81	2.81	3.23	3.44	4.07	5.02	5.4	6.18	6.28	6.29	6.52	6.62	6.62	6.62
1	0.45	1.81	2.35	2.7	2.7	3.12	3.34	3.97	4.87	5.27	6.02	6.12	6.13	6.35	6.46	6.46	6.46
10	0.45	1.81	2.35	2.7	2.7	3.12	3.34	3.97	4.87	5.27	6.02	6.12	6.13	6.35	6.46	6.46	6.46
25	0.45	1.81	2.35	2.7	2.7	3.12	3.34	3.97	4.87	5.27	6.02	6.12	6.13	6.35	6.46	6.46	6.46
50	0.44	1.8	2.35	2.7	2.7	3.12	3.26	3.88	4.75	5.15	5.89	5.98	5.99	6.21	6.46	6.46	6.46
100	0.43	1.77	2.35	2.7	2.7	3.12	3.16	3.74	4.62	4.96	5.67	5.77	5.78	5.97	6.35	6.42	6.42
150	0.43	1.74	2.34	2.7	2.7	3.12	3.14	3.61	4.51	4.82	5.51	5.61	5.61	5.74	6.3	6.34	6.34
200	0.42	1.73	2.33	2.7	2.7	3.11	3.12	3.57	4.42	4.74	5.4	5.45	5.5	5.7	6.21	6.26	6.26
300	0.41	1.71	2.3	2.68	2.69	3.08	3.09	3.43	4.25	4.58	5.21	5.29	5.43	5.52	6.04	6.15	6.15
400	0.41	1.69	2.27	2.66	2.66	3.05	3.06	3.38	4.14	4.44	5.05	5.2	5.2	5.46	6.03	6.05	6.05
500	0.4	1.67	2.22	2.63	2.64	3	3.03	3.28	4.03	4.31	4.9	5.14	5.17	5.38	5.88	5.98	5.98
1,000	0.38	1.6	2.18	2.55	2.55	2.91	2.92	3.08	3.68	3.85	4.42	4.84	4.94	5.22	5.68	5.73	5.73
2,000	0.34	1.51	2.08	2.42	2.43	2.78	2.8	2.91	3.32	3.62	4.19	4.52	4.67	4.86	5.35	5.45	5.45
5,000	0.31	1.33	1.83	2.09	2.11	2.41	2.49	2.7	3	3.27	3.73	4.06	4.11	4.47	4.89	4.89	4.89
10,000	0.26	1.06	1.57	1.82	1.82	2.08	2.3	2.49	2.63	2.86	3.31	3.62	3.69	4.01	4.37	4.38	4.38
20,000	0.2	0.84	1.37	1.59	1.6	1.83	2.02	2.16	2.37	2.6	3.02	3.21	3.41	3.53	3.82	3.87	3.87
50,000	0.13	0.54	0.95	1.15	1.17	1.41	1.59	1.82	1.96	2.21	2.46	2.61	2.62	2.9	2.98	3.1	3.10
100,000	0.08	0.27	0.56	0.66	0.67	0.98	1.25	1.44	1.59	1.77	1.94	2.06	2.15	2.3	2.38	2.44	2.44
132,242	0.05	0.24	0.43	0.55	0.64	0.81	1.02	1.26	1.43	1.58	1.74	1.86	1.91	1.99	2.09	2.09	2.09

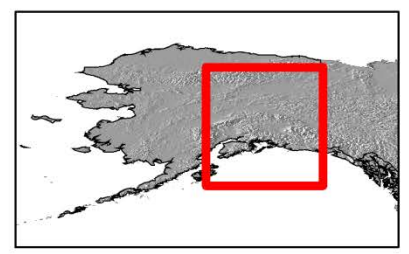




Total 288-hours Precipitation (inches)
SPAS #1273
July 25 1000 UTC - August 6 0900 UTC, 1958

Precipitation (inches)

0.51 - 1.00	5.01 - 6.00	10.01 - 12.00	20.01 - 22.00	● Daily
1.01 - 2.00	6.01 - 7.00	12.01 - 14.00	22.01 - 24.00	■ Hourly
2.01 - 3.00	7.01 - 8.00	14.01 - 16.00	24.01 - 26.00	□ Hourly Est.
3.01 - 4.00	8.01 - 9.00	16.01 - 18.00	26.01 - 28.00	◆ Supplemental
4.01 - 5.00	9.01 - 10.00	18.01 - 20.00	28.01 - 30.00	□ DAD Zones



METSTAT, Inc. 04/24/2013

Little Susitna, AK, SPAS 1271 Zone 1
August 18, 1959

Storm Name:	Little Susitna-SPAS 1271 Zone 1	Storm Adjustment for Susitna-Watana
Storm Date:	8/18-26/1959	
AWA Analysis Date:	3/28/2013	

Temporal Transposition Date	15-Aug		Moisture Inflow Direction:	SSW @ 700	miles
Storm center location	Lat	Long	Basin Elevation	NA	feet
	61.85 N	149.23 W	Storm Elevation	5,150	feet
Storm Rep SST location	52.00 N	154.00 W	Storm Duration	24	hours
Transposition SST location	NA	NA	Effective Barrier Height	NA	feet
Basin location	42.76 N	74.12 W			

The storm representative SST is	52.0 F	with total precipitable water above sea level of	0.92	inches.
The in-place maximum SST is	56.0 F	with total precipitable water above sea level of	1.13	inches.
The transposition maximum SST is	NA	with total precipitable water above sea level of	4.44	inches.
The in-place storm elevation is	5,150	which subtracts 0.48 inches of precipitable water at	52.0 F	
The in-place storm elevation is	5,150	which subtracts 0.56 inches of precipitable water at	56.0 F	
The transposition storm elevation at	NA	which subtracts xx inches of precipitable water at	NA	
The moisture inflow barrier height is	NA	which subtracts xx inches of precipitable water at	NA	

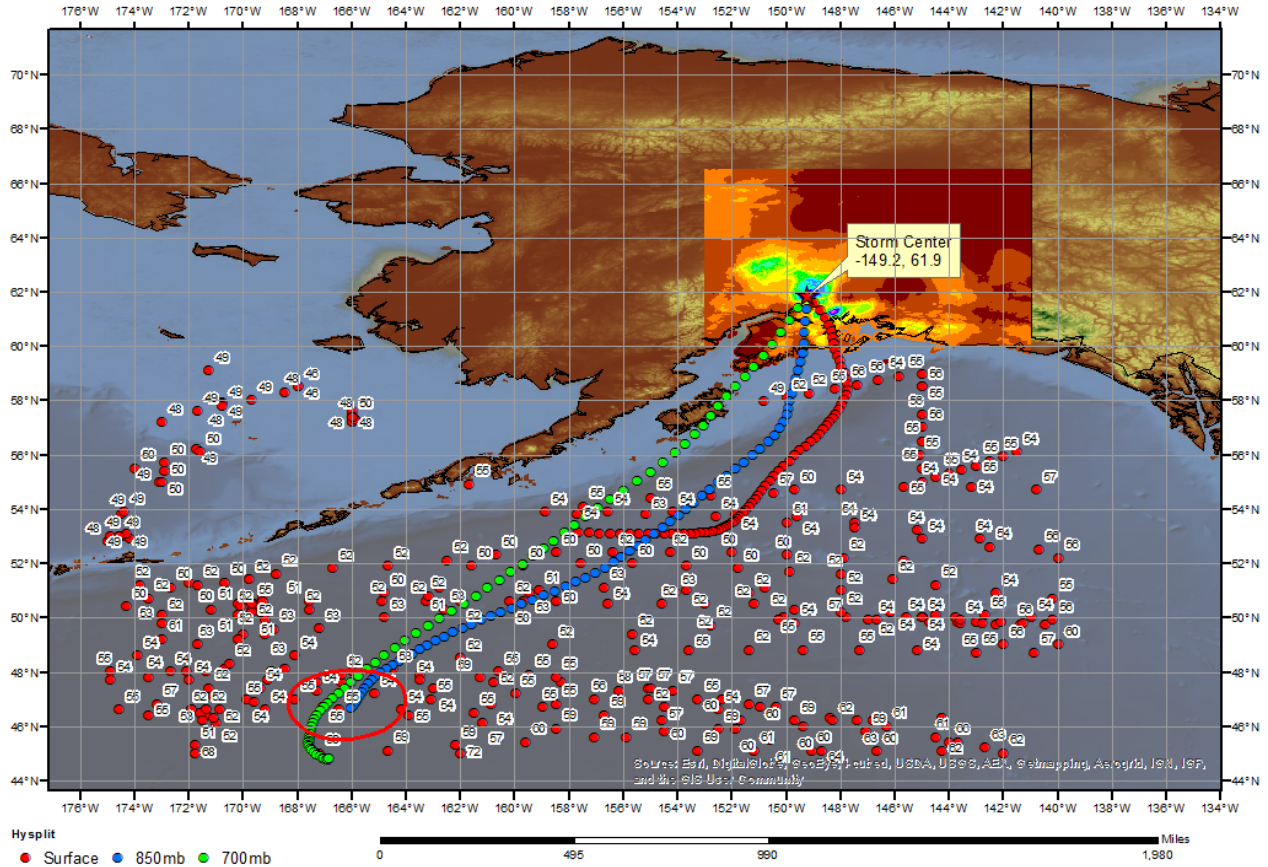
The in-place maximization factor is	1.30	Notes: Storm representative SST value was based on SST values for August 21-22, 1959 along the HYSPLIT trajectory data. Values were selected in region where temperature did not vary more than a 1-degree over a large area and had temperature recordings throughout the period.
The transposition/elevation factor is	#VALUE!	
The barrier adjustment factor is	#VALUE!	
The total adjustment factor is	#VALUE!	

Observed Storm Depth-Area-Duration											
	6 Hours	12 Hours	24 Hours	36 Hours	48 Hours	72 Hours	96 Hours	120 Hours	144 Hours	168 Hours	192 Hours
10 sq miles	3.8	5.2	7.2	8.8	9.6	10.3	10.5	11.3	11.5	12.7	12.7
100 sq miles	3.5	4.8	6.8	8.3	9.0	9.8	10.0	10.8	10.9	12.2	12.3
200 sq miles	3.2	4.4	6.4	7.7	8.4	9.3	9.4	10.1	10.4	11.4	11.8
500 sq miles	2.5	3.8	5.7	6.4	7.6	8.4	8.6	9.0	9.6	10.6	10.8
1000 sq miles	2.5	3.3	5.1	6.3	7.0	7.7	7.9	8.3	8.9	9.7	9.9
2000 sq miles	2.0	2.9	4.4	5.2	6.0	6.8	6.9	7.2	7.9	8.8	8.9
5000 sq miles	1.5	2.0	3.3	3.9	4.6	5.2	5.3	5.7	6.1	7.2	7.2
10000 sq miles	1.1	1.3	1.9	2.9	3.1	3.9	4.0	4.3	4.4	5.8	5.9
20000 sq miles	0.6	1.0	1.6	2.1	2.5	2.5	2.5	2.5	3.8	4.4	4.4

Adjusted Storm Depth-Area-Duration											
	6 Hours	12 Hours	24 Hours	36 Hours	48 Hours	72 Hours	96 Hours	120 Hours	144 Hours	168 Hours	192 Hours
10 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
100 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
200 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
500 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
1000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
2000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
5000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
10000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
20000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!

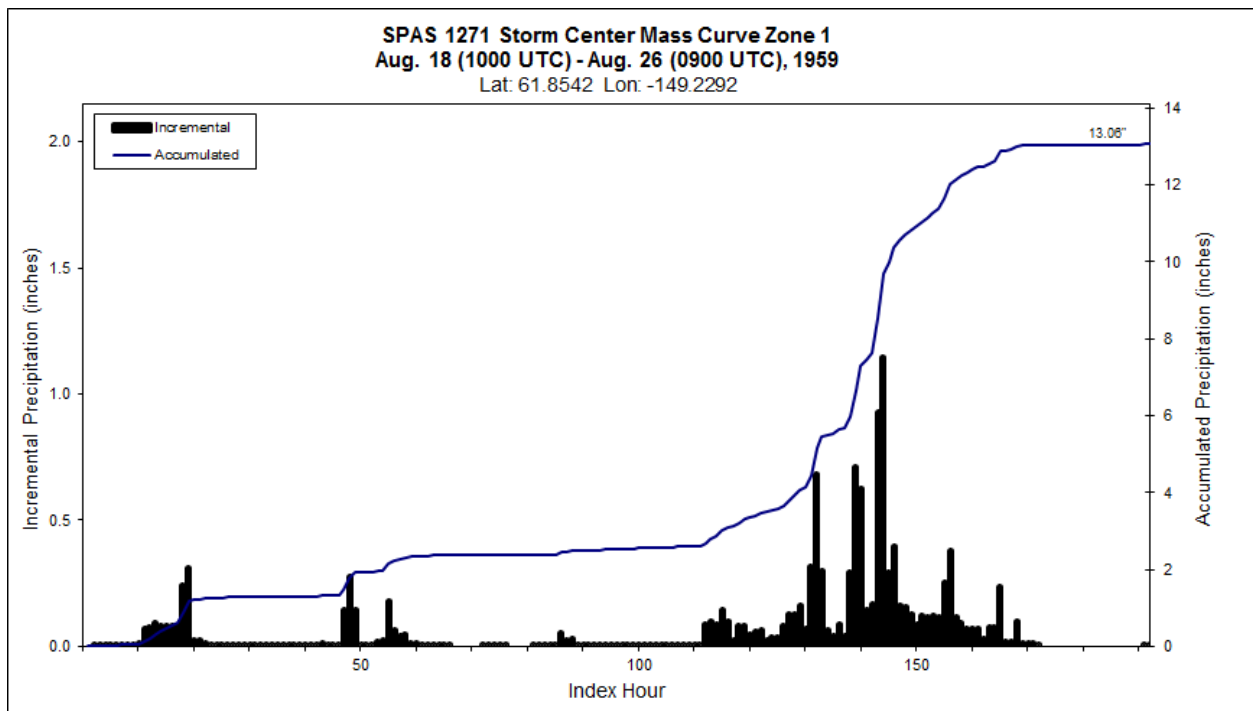
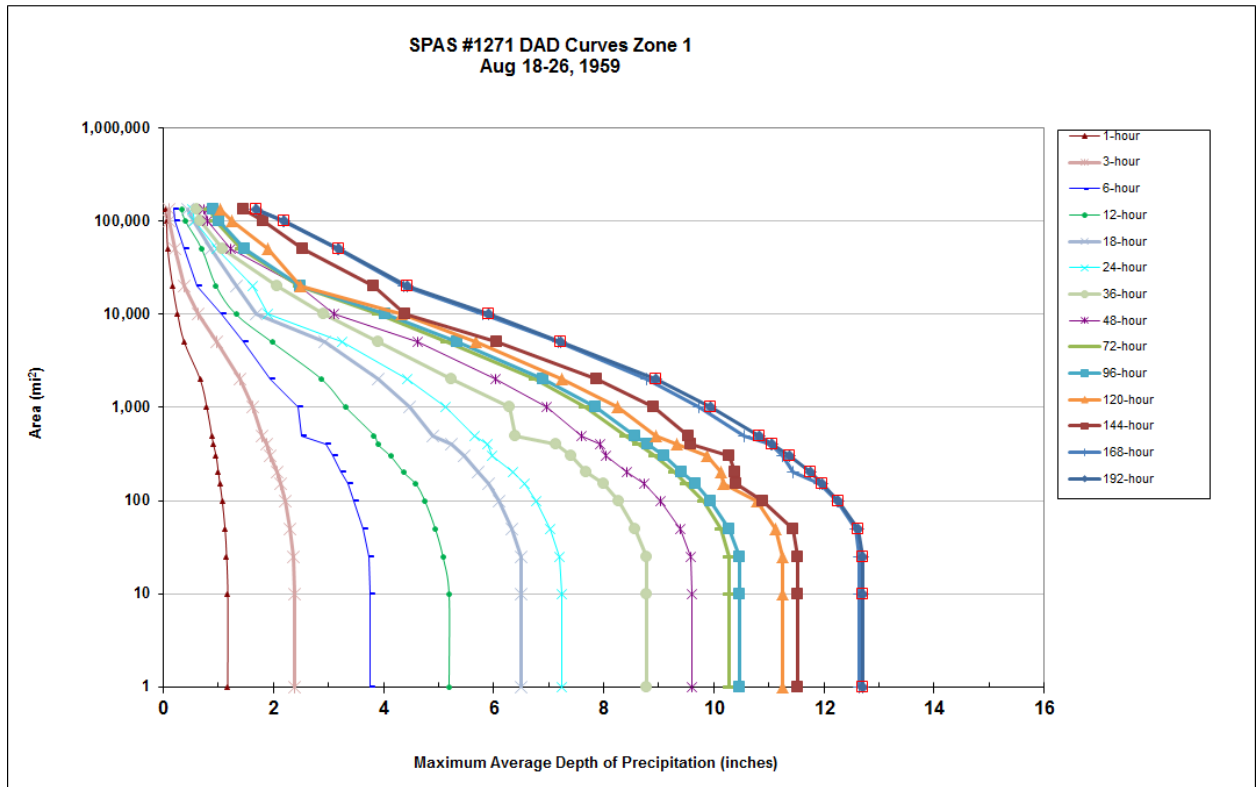
Storm or Storm Center Name	Little Susitna-SPAS 1271 Zone 1	
Storm Date(s)	8/18-26/1959	
Storm Type	Series of Low Pressure Systems and Associated Storms	
Storm Location	61.85 N	149.23 W
Storm Center Elevation	5150	
Precipitation Total & Duration	13.06 inches in 192 hours	
Storm Representative SST	52.0 F	15-Aug 15-Sep
Storm Representative SST Location	52.00 N	154.00 W 56 55.5
In-place Maximum SST	56.0 F	
Moisture Inflow Vector	SSW @ 700	
In-place Maximization Factor	1.30	
Temporal Transposition (Date)	15-Aug	
Transposition SST Location	NA	NA
Transposition Maximum SST	NA	
Transposition Adjustment Factor	#VALUE!	
Average Basin Elevation	NA	
Highest Elevation in Basin	NA	
Inflow Barrier Height	NA	
Elevation Adjustment Factor	#VALUE!	
Total Adjustment Factor	#VALUE!	

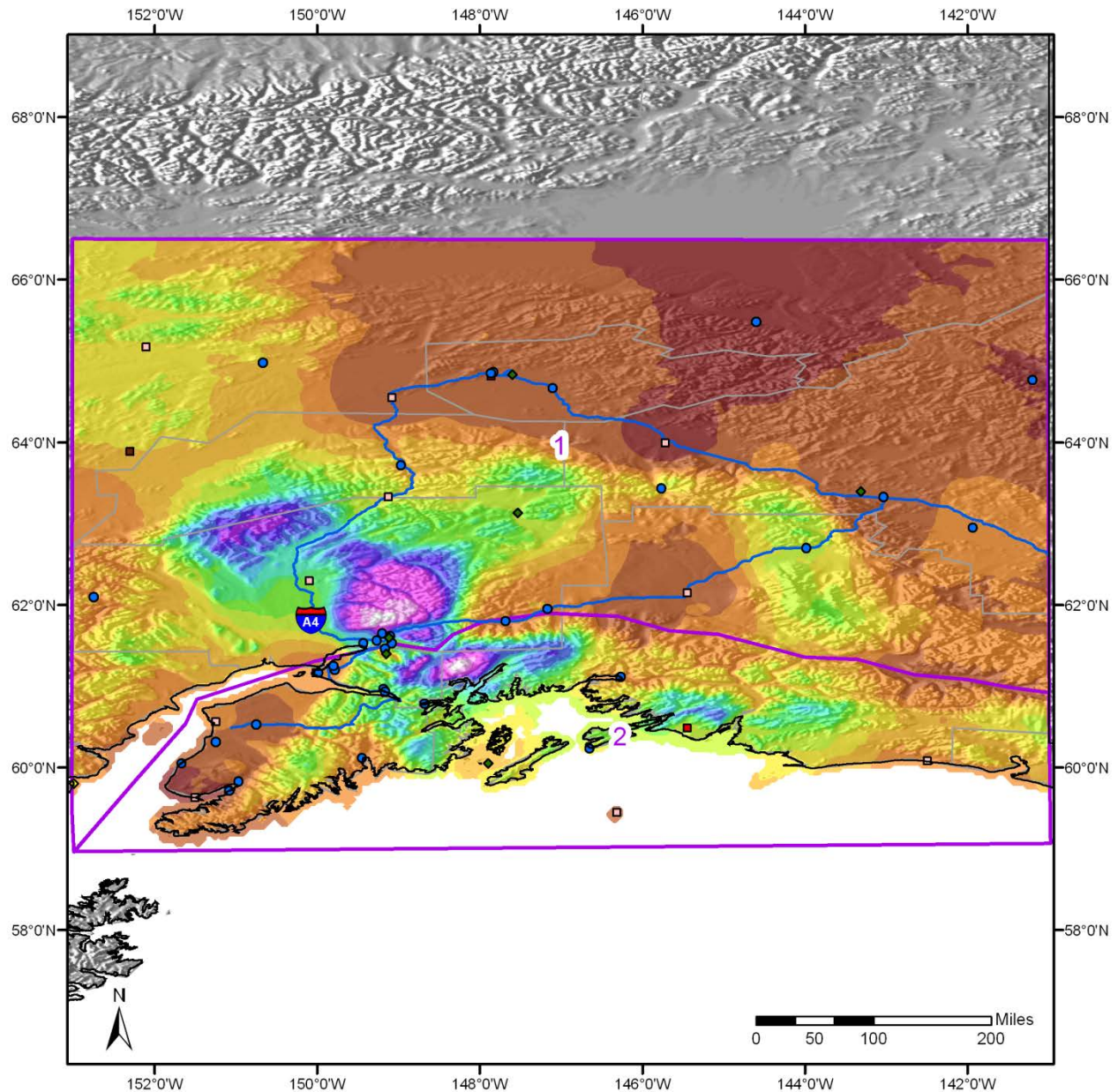
SPAS 1271 Gateway, AK Storm Analysis
August 18 - 26, 1955



Storm 1271 - Aug. 18 (1000 UTC) - Aug. 26 (0900 UTC), 1959
MAXIMUM AVERAGE DEPTH OF PRECIPITATION (INCHES)

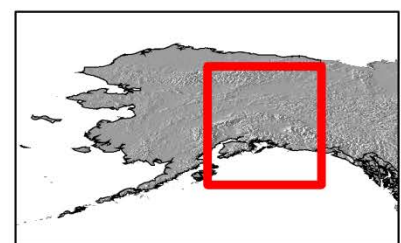
Area (mi ²)	Duration (hours)														Total
	1	3	6	12	18	24	36	48	72	96	120	144	168	192	
0.2	1.19	2.44	3.84	5.33	6.7	7.41	9.04	9.86	10.59	10.74	11.58	11.86	13.03	13.06	13.06
1	1.17	2.38	3.76	5.19	6.51	7.23	8.78	9.61	10.29	10.47	11.25	11.53	12.65	12.71	12.71
10	1.17	2.38	3.76	5.19	6.51	7.23	8.78	9.61	10.29	10.47	11.25	11.53	12.65	12.71	12.71
25	1.15	2.37	3.73	5.08	6.51	7.2	8.78	9.59	10.29	10.47	11.25	11.53	12.65	12.71	12.71
50	1.12	2.31	3.63	4.94	6.34	7.03	8.57	9.4	10.14	10.28	11.13	11.44	12.59	12.62	12.62
100	1.07	2.21	3.47	4.75	6.11	6.78	8.27	9.03	9.81	9.95	10.79	10.9	12.24	12.27	12.27
150	1.03	2.13	3.35	4.59	5.92	6.56	7.99	8.74	9.5	9.67	10.17	10.4	11.92	11.96	11.96
200	1	2.06	3.23	4.37	5.73	6.35	7.69	8.42	9.29	9.41	10.14	10.38	11.43	11.76	11.76
300	0.96	1.95	3.08	4.13	5.46	5.98	7.4	8.04	8.93	9.1	9.88	10.27	11.26	11.38	11.38
400	0.91	1.87	2.95	3.9	5.23	5.88	7.14	7.93	8.64	8.81	9.32	9.59	11.04	11.07	11.07
500	0.88	1.8	2.51	3.83	4.9	5.65	6.4	7.6	8.4	8.56	8.95	9.55	10.55	10.82	10.82
1,000	0.79	1.63	2.45	3.32	4.48	5.13	6.29	6.97	7.66	7.85	8.26	8.91	9.73	9.94	9.94
2,000	0.67	1.39	1.95	2.88	3.9	4.44	5.23	6.04	6.75	6.91	7.24	7.87	8.79	8.94	8.94
5,000	0.38	0.97	1.46	1.98	2.93	3.26	3.9	4.62	5.15	5.34	5.68	6.06	7.18	7.21	7.21
10,000	0.26	0.64	1.05	1.32	1.69	1.89	2.91	3.1	3.9	4.03	4.32	4.39	5.8	5.9	5.90
20,000	0.17	0.37	0.62	0.96	1.32	1.62	2.06	2.47	2.47	2.48	2.48	3.83	4.37	4.44	4.44
50,000	0.08	0.22	0.38	0.7	0.87	0.97	1.08	1.22	1.42	1.48	1.89	2.54	3.17	3.18	3.18
100,000	0.06	0.11	0.22	0.4	0.54	0.57	0.68	0.81	0.94	1.01	1.24	1.81	2.17	2.19	2.19
132,207	0.04	0.1	0.19	0.33	0.44	0.52	0.61	0.74	0.85	0.91	1.04	1.45	1.67	1.69	1.69





Total 192-hour Precipitation (inches)
08/18/1959 - 08/25/1959
SPAS #1271

Precipitation (inches)			
0.12 - 0.50	3.01 - 3.50	7.01 - 8.00	● Daily
0.51 - 1.00	3.51 - 4.00	8.01 - 10.00	■ Hourly
1.01 - 1.50	4.01 - 4.50	10.01 - 12.00	□ Hourly Est.
1.51 - 2.00	4.51 - 5.00	12.01 - 14.00	■ Hourly Est. Pseudo
2.01 - 2.50	5.01 - 6.00		◆ Supplemental
2.51 - 3.00	6.01 - 7.00		◆ Supplemental Est.

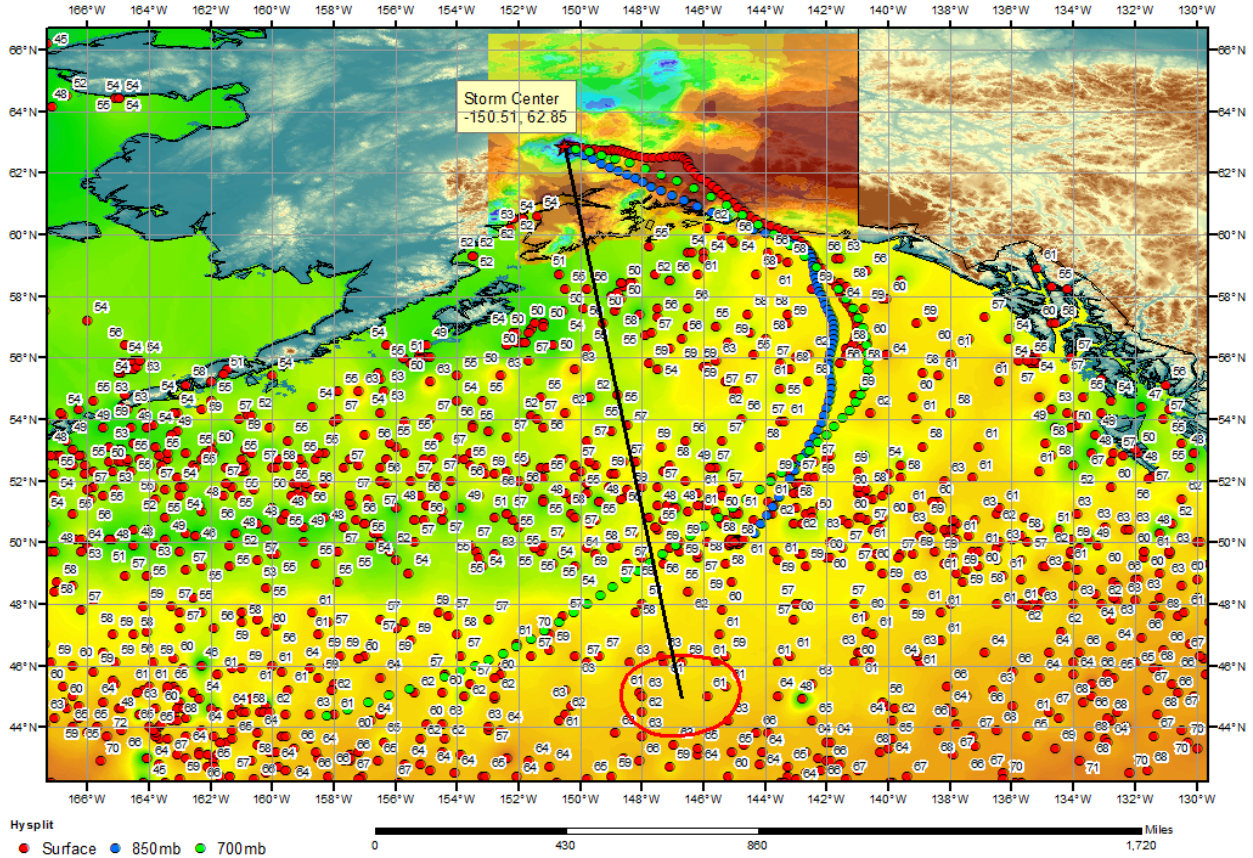


METSTAT, Inc. 03/28/2013

Denali NP, AK, SPAS 1270 Zone 2 August 2, 1967

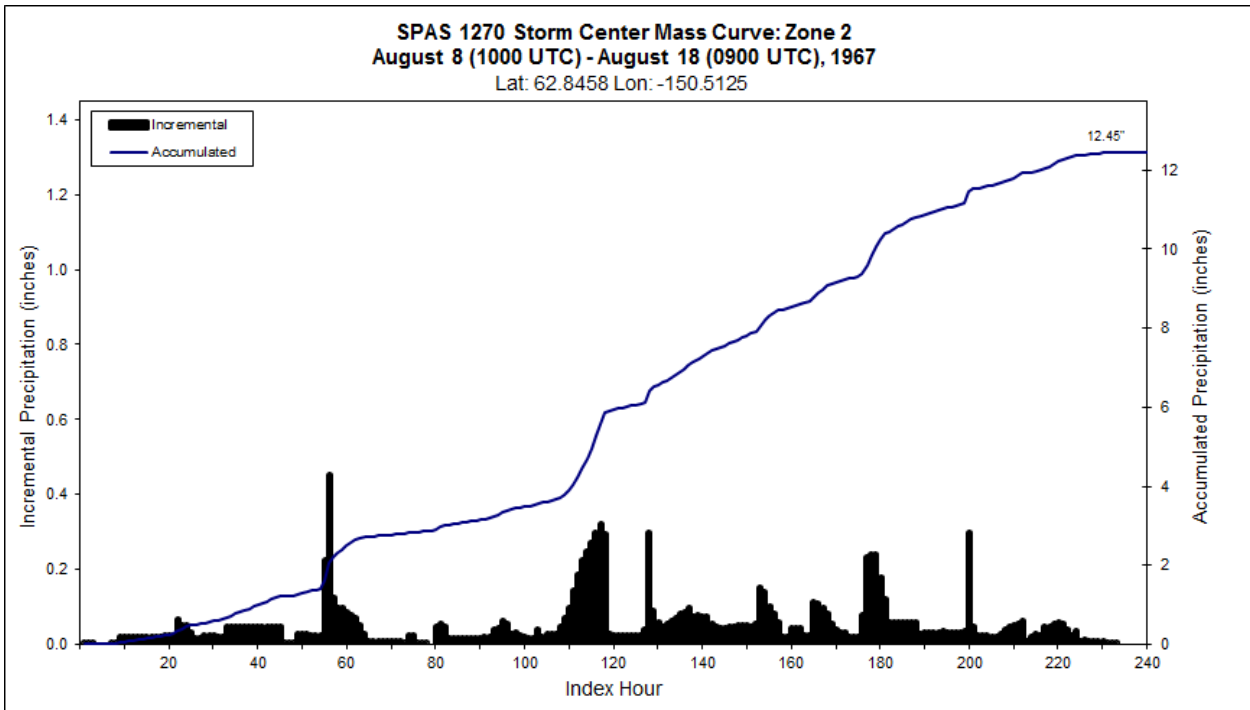
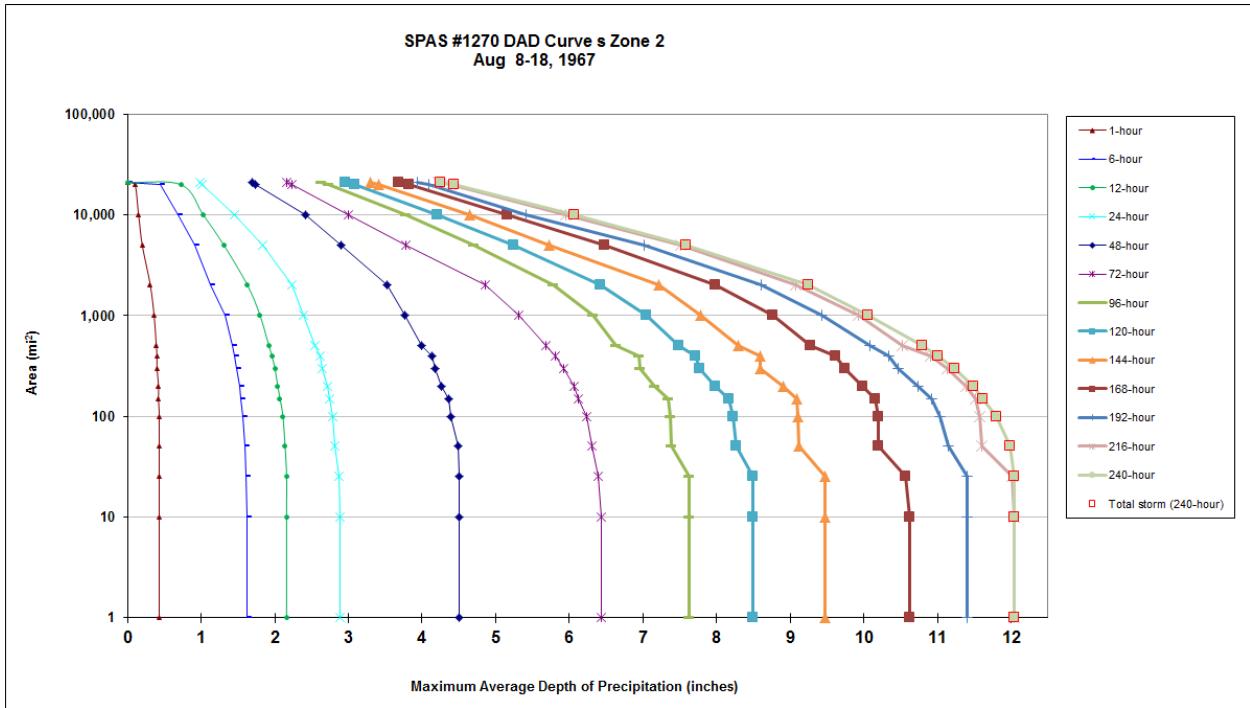
Storm Name: SPAS 1270-Fairbanks-DAD Zone		Storm Adjustment for Susitna-Watana											
Storm Date: 8/2-17/1967													
AWA Analysis Date: 2/4/2013													
Temporal Transposition Date 15-Aug													
		Lat	Long	Moisture Inflow Direction: SSE @ 910		miles							
Storm center location		62.84 N	150.51 W	Basin Elevation		3,650		feet					
Storm Rep SST location		45.00 N	149.00 W	Storm Elevation		5,080		feet					
Transposition SST location		NA	NA	Storm Duration		24		hours					
Basin location		62.84 N	147.37 W	Effective Barrier Height		1,483		feet					
The storm representative SST is		61.0 F		with total precipitable water above sea level of				1.45		inches.			
The in-place maximum SST is		62.5 F		with total precipitable water above sea level of				1.56		inches.			
The transpositioned maximum SST is		NA		with total precipitable water above sea level of				4.44		inches.			
The in-place storm elevation is		5,080		which subtracts		0.66		inches of precipitable water at		61.0 F			
The in-place storm elevation is		5,080		which subtracts		0.70		inches of precipitable water at		62.5 F			
The transposition storm elevation at		3,650		which subtracts		xx		inches of precipitable water at		NA			
The moisture inflow barrier height is		1,483		which subtracts		xx		inches of precipitable water at		NA			
The in-place maximization factor is		1.09		Notes: Storm representative SST value was based on SST values for August 7-12, 1967 along the surface HYSPLIT trajectory data. Values were selected in region where temperature did not vary more than a 1-degree over a large area and had temperature recordings throughout the period.									
The transposition/elevation factor is		#VALUE!											
The barrier adjustment factor is		#VALUE!											
The total adjustment factor is		#VALUE!											
Observed Storm Depth-Area-Duration													
		6 Hours	12 Hours	24 Hours	48 Hours	72 Hours	96 Hours	120 Hours	144 Hours	168 Hours	192 Hours	216 Hours	240 Hours
10 sq miles		1.6	2.2	2.9	4.5	6.4	7.6	8.5	9.5	10.6	11.4	12.0	12.1
100 sq miles		1.6	2.1	2.8	4.4	6.2	7.4	8.2	9.1	10.2	11.0	11.6	11.8
200 sq miles		1.5	2.0	2.7	4.3	6.1	7.2	8.0	8.9	10.0	10.7	11.4	11.5
500 sq miles		1.4	1.9	2.5	4.0	5.7	6.6	7.5	8.3	9.3	10.1	10.5	10.8
1000 sq miles		1.3	1.8	2.4	3.8	5.3	6.3	7.0	7.8	8.8	9.4	9.9	10.1
2000 sq miles		1.1	1.6	2.2	3.5	4.9	5.8	6.4	7.2	8.0	8.6	9.1	9.3
5000 sq miles		0.9	1.3	1.8	2.9	3.8	4.7	5.2	5.7	6.5	7.0	7.5	7.6
10000 sq miles		0.7	1.0	1.5	2.4	3.0	3.8	4.2	4.6	5.2	5.4	6.0	6.1
20000 sq miles		0.5	0.7	1.0	1.7	2.2	2.7	3.1	3.4	3.8	4.1	4.4	4.4
Adjusted Storm Depth-Area-Duration													
		6 Hours	12 Hours	24 Hours	48 Hours	72 Hours	96 Hours	120 Hours	144 Hours	168 Hours	192 Hours	216 Hours	240 Hours
10 sq miles		#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
100 sq miles		#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
200 sq miles		#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
500 sq miles		#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
1000 sq miles		#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
2000 sq miles		#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
5000 sq miles		#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
10000 sq miles		#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
20000 sq miles		#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Storm or Storm Center Name		SPAS 1270-Fairbanks-DAD Zone 2											
Storm Date(s)		8/2-17/1967											
Storm Type		Storms and Atmospheric River Episodes											
Storm Location		62.84 N 150.51 W											
Storm Center Elevation		5080											
Precipitation Total & Duration		6.4 inches in 72 hours											
Storm Representative SST		61.0 F											
Storm Representative SST Location		45.00 N 149.00 W					15-Aug						
In-place Maximum SST		62.5 F											
Moisture Inflow Vector		SSE @ 910											
In-place Maximization Factor		1.09											
Temporal Transposition (Date)		15-Aug											
Transposition SST Location		NA NA											
Transposition Maximum SST		NA											
Transposition Adjustment Factor		#VALUE!											
Average Basin Elevation		3,650											
Highest Elevation in Basin		13,131											
Inflow Barrier Height		1,483											
Elevation Adjustment Factor		#VALUE!											
Total Adjustment Factor		#VALUE!											

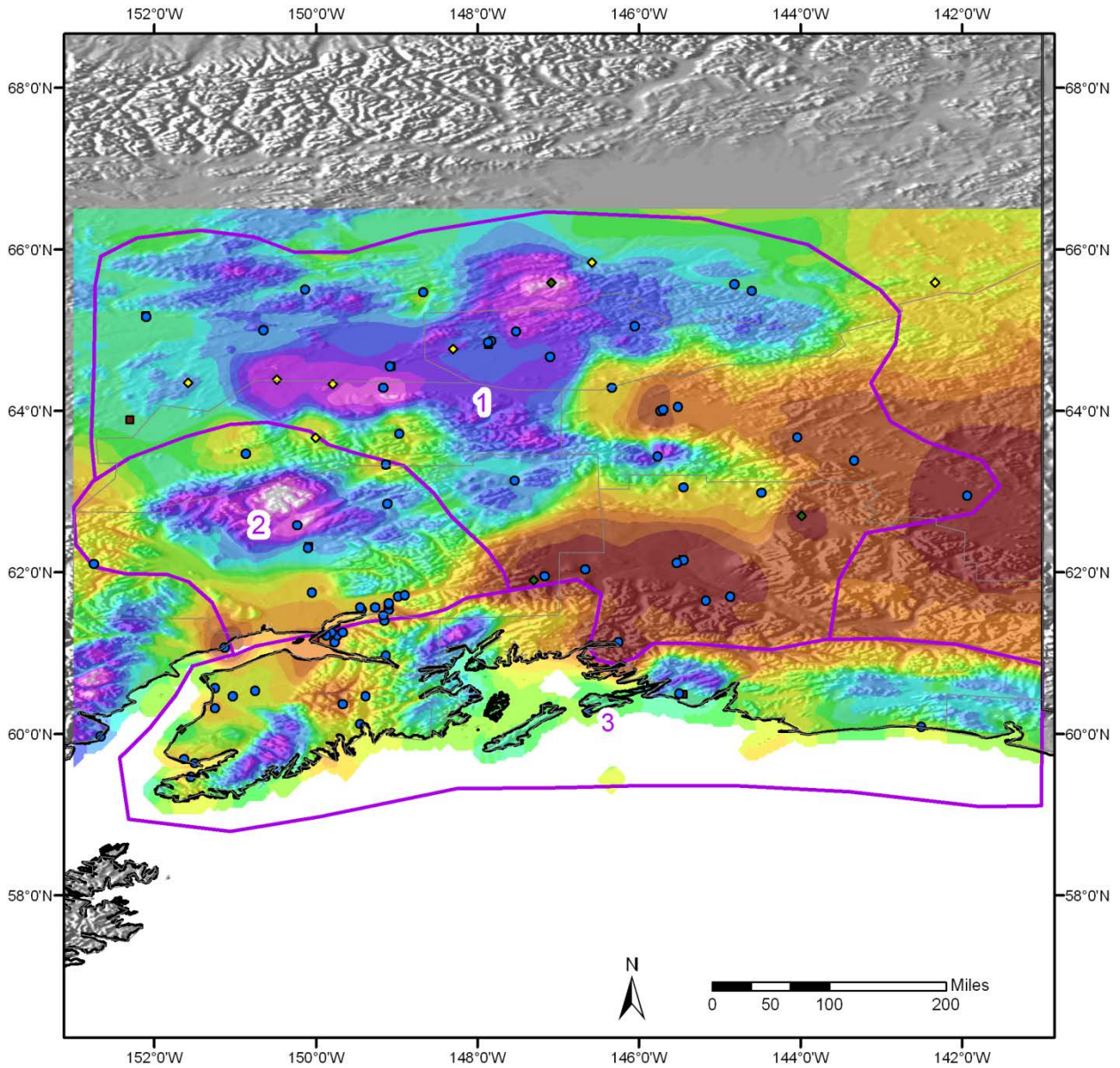
SPAS 1270 Fairbanks, AK Storm Analysis
August 11 - 16, 1967



Storm 1270 - Aug. 8 (1000 UTC) - Aug. 18 (0900 UTC), 1967
MAXIMUM AVERAGE DEPTH OF PRECIPITATION (INCHES)

Area (mi ²)	Duration (hours)													
	1	6	12	24	48	72	96	120	144	168	192	216	240	Total
0.2	0.45	1.66	2.24	2.95	4.67	6.59	7.91	8.78	9.74	10.91	11.75	12.36	12.45	12.45
1	0.43	1.62	2.16	2.89	4.5	6.43	7.63	8.49	9.47	10.63	11.4	12.04	12.05	12.05
10	0.43	1.62	2.16	2.89	4.5	6.43	7.63	8.49	9.47	10.63	11.4	12.04	12.05	12.05
25	0.43	1.61	2.16	2.87	4.5	6.4	7.63	8.49	9.47	10.57	11.4	12.01	12.05	12.05
50	0.43	1.6	2.14	2.82	4.49	6.31	7.39	8.27	9.12	10.2	11.15	11.61	11.98	11.98
100	0.43	1.56	2.11	2.79	4.39	6.23	7.37	8.22	9.11	10.2	11.04	11.58	11.8	11.80
150	0.42	1.54	2.07	2.75	4.37	6.13	7.35	8.17	9.09	10.15	10.92	11.52	11.62	11.62
200	0.42	1.52	2.04	2.71	4.27	6.07	7.16	7.99	8.9	9.99	10.74	11.39	11.49	11.49
300	0.4	1.48	2	2.65	4.18	5.92	6.96	7.77	8.59	9.75	10.47	11.13	11.23	11.23
400	0.4	1.45	1.96	2.61	4.13	5.81	6.94	7.72	8.59	9.61	10.34	10.91	11	11.00
500	0.39	1.43	1.92	2.54	4	5.69	6.64	7.49	8.29	9.27	10.08	10.52	10.8	10.80
1,000	0.36	1.33	1.8	2.39	3.77	5.31	6.32	7.04	7.78	8.77	9.43	9.93	10.06	10.06
2,000	0.31	1.13	1.63	2.24	3.53	4.86	5.78	6.42	7.21	7.99	8.61	9.08	9.25	9.25
5,000	0.2	0.92	1.31	1.84	2.9	3.78	4.71	5.24	5.72	6.48	7.02	7.51	7.59	7.59
10,000	0.15	0.69	1.03	1.45	2.42	3	3.78	4.2	4.64	5.16	5.42	5.95	6.07	6.07
20,000	0.1	0.45	0.73	1.01	1.74	2.23	2.73	3.08	3.41	3.83	4.09	4.39	4.43	4.43
21,152	0	0	0	0.98	1.69	2.16	2.63	2.96	3.3	3.68	3.94	4.22	4.25	4.25

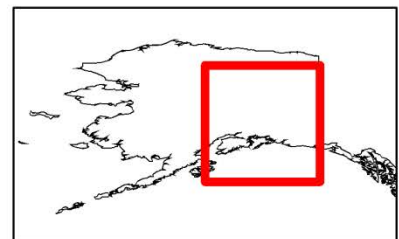




Total Storm (240-hr) Precipitation (inches)
August 8-17, 1967 - "The Great Fairbanks Flood"
SPAS #1270

Precipitation (inches)

0.00 - 0.50	3.01 - 3.50	7.01 - 8.00	● Daily
0.51 - 1.00	3.51 - 4.00	8.01 - 9.00	■ Hourly
1.01 - 1.50	4.01 - 4.50	9.01 - 10.00	■ Hourly Est. Psuedo
1.51 - 2.00	4.51 - 5.00	10.01 - 11.00	◆ Supplemental
2.01 - 2.50	5.01 - 6.00	11.01 - 12.00	◆ Supplemental Est.
2.51 - 3.00	6.01 - 7.00		

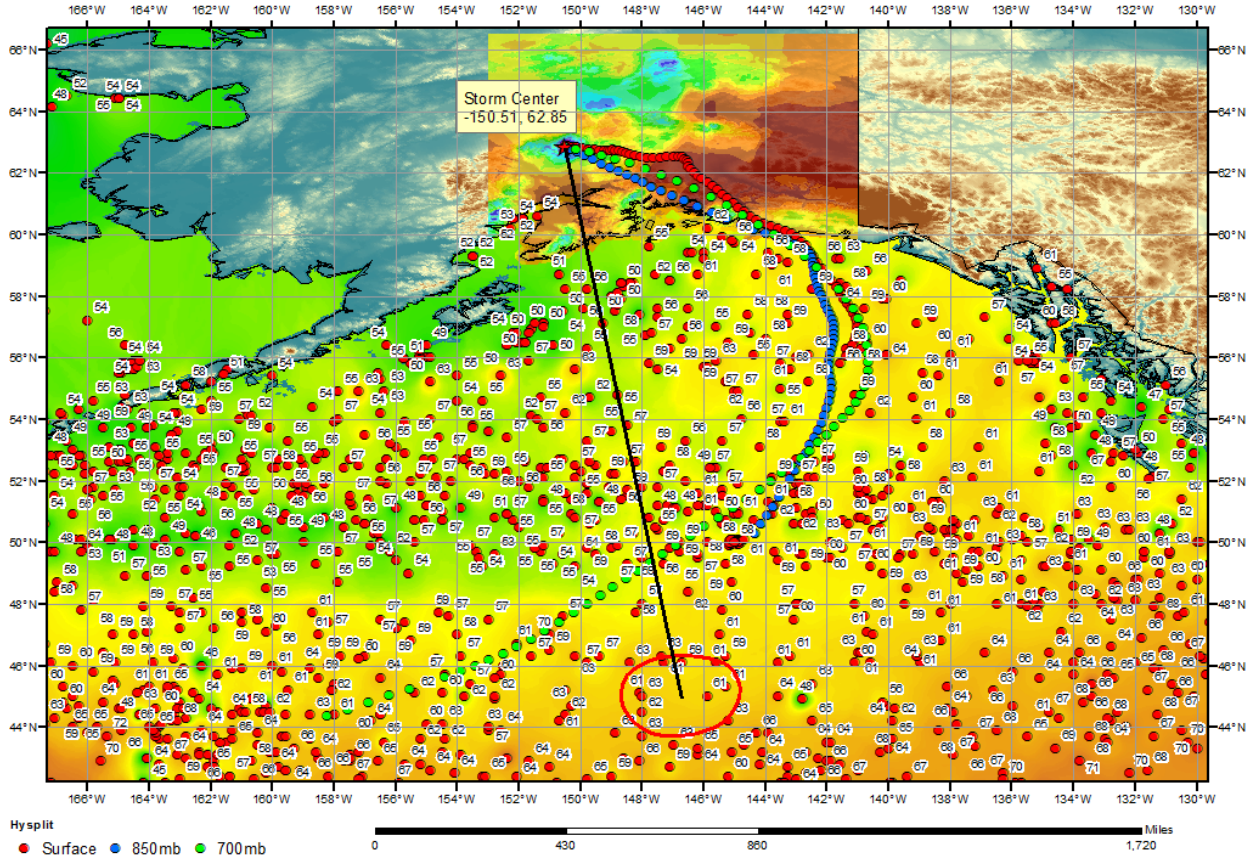


METSTAT, Inc. 02/04/2013

Fairbanks, AK, SPAS 1270 Zone 1 August 2, 1967

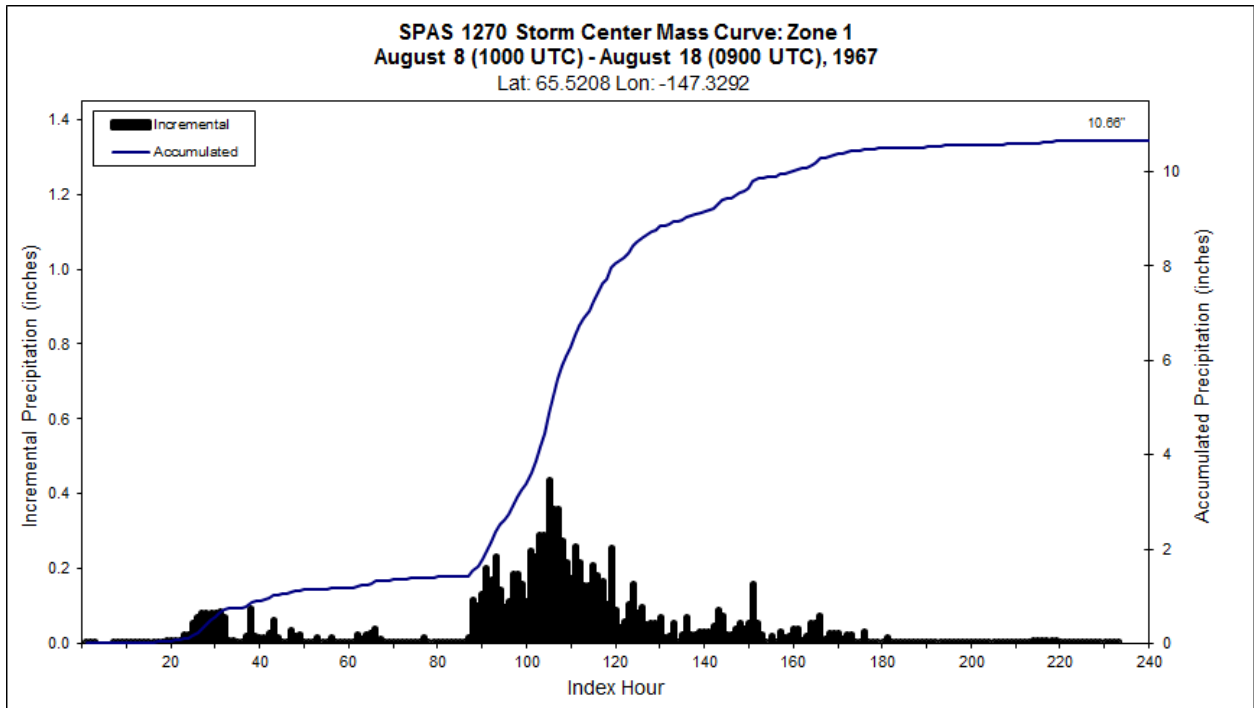
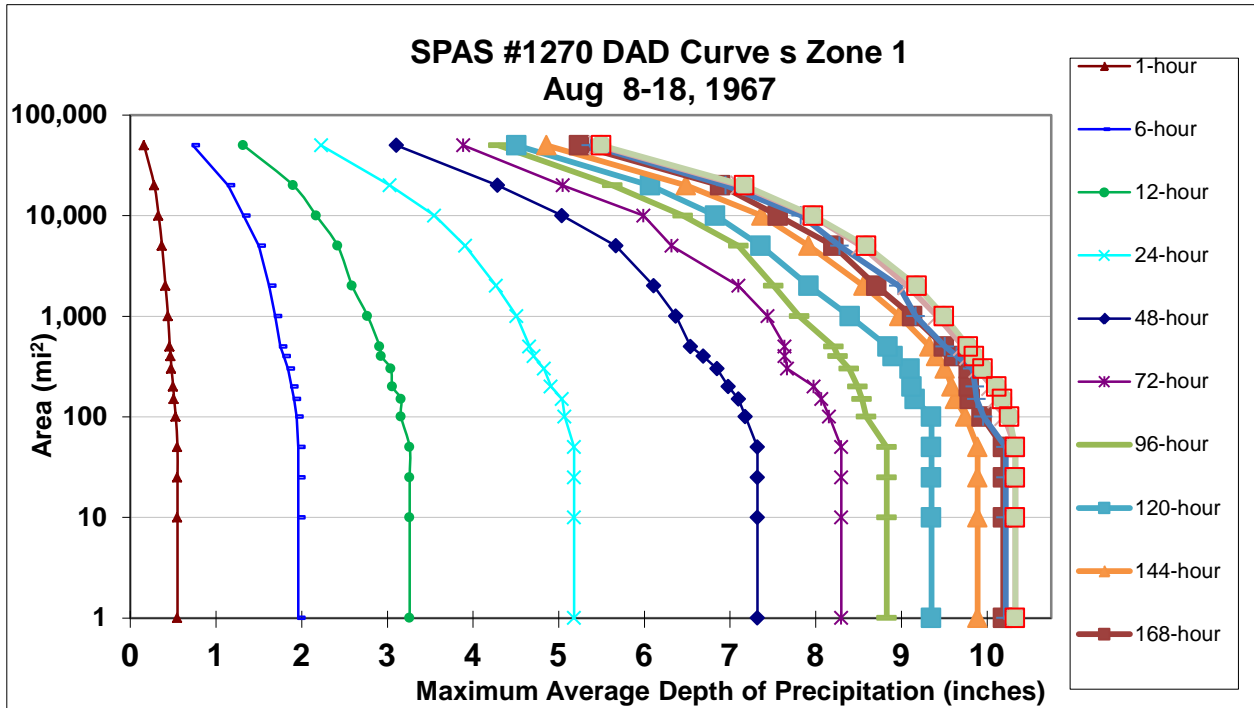
Storm Name:		SPAS 1270-Fairbanks-DAD Zone 1												
Storm Date:		8/2-17/1967												
AWA Analysis Date:		2/4/2013												
Storm Adjustment for Alaska														
Temporal Transposition Date		15-Aug												
		Lat	Long											
Storm center location		65.52 N	147.33 W	Moisture Inflow Direction:									S @ 1,420	miles
Storm Rep SST location		45.00 N	149.00 W	Basin Elevation									3,650	feet
Transposition SST location		34.45 N	71.97 W	Storm Elevation									7,600	feet
Basin location		62.84 N	147.37 W	Storm Duration									24	hours
											Effective Barrier Height	1,483	feet	
The storm representative SST is		61.0 F	with total precipitable water above sea level of									1.45	inches.	
The in-place maximum SST is		62.5 F	with total precipitable water above sea level of									1.56	inches.	
The transpositioned maximum SST is		83.0 F	with total precipitable water above sea level of									4.06	inches.	
The in-place storm elevation is		7,600	which subtracts 0.80		inches of precipitable water at						61.0 F			
The in-place storm elevation is		7,600	which subtracts 0.83		inches of precipitable water at						62.5 F			
The transposition storm elevation at		3,650	which subtracts xx		inches of precipitable water at						83.0 F			
The moisture inflow barrier height is		1,483	which subtracts xx		inches of precipitable water at						83.0 F			
The in-place maximization factor is		1.12												
The transposition/elevation factor is		#VALUE!												
The barrier adjustment factor is		#VALUE!												
The total adjustment factor is		#VALUE!												
Notes: Storm representative SST value was based on SST values for August 7-12, 1967 along the surface HYSPLIT trajectory data. Values were selected in region where temperature did not vary more than a 1-degree over a large area and had temperature recordings throughout the period.														
Observed Storm Depth-Area-Duration														
	6 Hours	12 Hours	24 Hours	48 Hours	72 Hours	96 Hours	120 Hours	144 Hours	168 Hours	192 Hours	216 Hours	240 Hours		
10 sq miles	2.0	3.3	5.2	7.3	8.3	8.8	9.4	9.9	10.2	10.2	10.3	10.3		
100 sq miles	1.9	3.2	5.1	7.2	8.2	8.6	9.4	9.8	9.9	10.0	10.2	10.3		
200 sq miles	1.9	3.1	4.9	7.0	8.0	8.5	9.1	9.6	9.8	9.9	10.1	10.1		
500 sq miles	1.8	2.9	4.7	6.5	7.6	8.2	8.8	9.3	9.5	9.5	9.7	9.8		
1000 sq miles	1.7	2.8	4.5	6.4	7.4	7.8	8.4	9.0	9.1	9.2	9.4	9.5		
2000 sq miles	1.6	2.6	4.3	6.1	7.1	7.5	7.9	8.6	8.7	9.0	9.1	9.2		
5000 sq miles	1.5	2.4	3.9	5.7	6.3	7.1	7.4	7.9	8.2	8.3	8.5	8.6		
10000 sq miles	1.3	2.2	3.6	5.0	6.0	6.5	6.8	7.4	7.6	7.8	8.0	8.0		
20000 sq miles	1.1	1.9	3.0	4.3	5.1	5.6	6.1	6.5	6.9	7.0	7.1	7.2		
Adjusted Storm Depth-Area-Duration														
	6 Hours	12 Hours	24 Hours	48 Hours	72 Hours	96 Hours	120 Hours	144 Hours	168 Hours	192 Hours	216 Hours	240 Hours		
10 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!		
100 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!		
200 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!		
500 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!		
1000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!		
2000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!		
5000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!		
10000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!		
20000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!		
Storm or Storm Center Name		SPAS 1270-Fairbanks-DAD Zone 1												
Storm Date(s)		8/2-17/1967												
Storm Type		Storms and Atmospheric River Episodes												
Storm Location		65.52 N 147.33 W												
Storm Center Elevation		7600												
Precipitation Total & Duration		6.4 inches in 72 hours												
Storm Representative SST		61.0 F												
Storm Representative SST Location		45.00 N 149.00 W				15-Aug								
In-place Maximum SST		62.5 F												
Moisture Inflow Vector		SSE @ 910												
In-place Maximization Factor		1.12												
Temporal Transposition (Date)		15-Aug												
Transposition SST Location		34.45 N 71.97 W												
Transposition Maximum SST		83.0 F												
Transposition Adjustment Factor		#VALUE!												
Average Basin Elevation		3,650												
Highest Elevation in Basin		13,131												
Inflow Barrier Height		1,483												
Elevation Adjustment Factor		#VALUE!												
Total Adjustment Factor		#VALUE!												

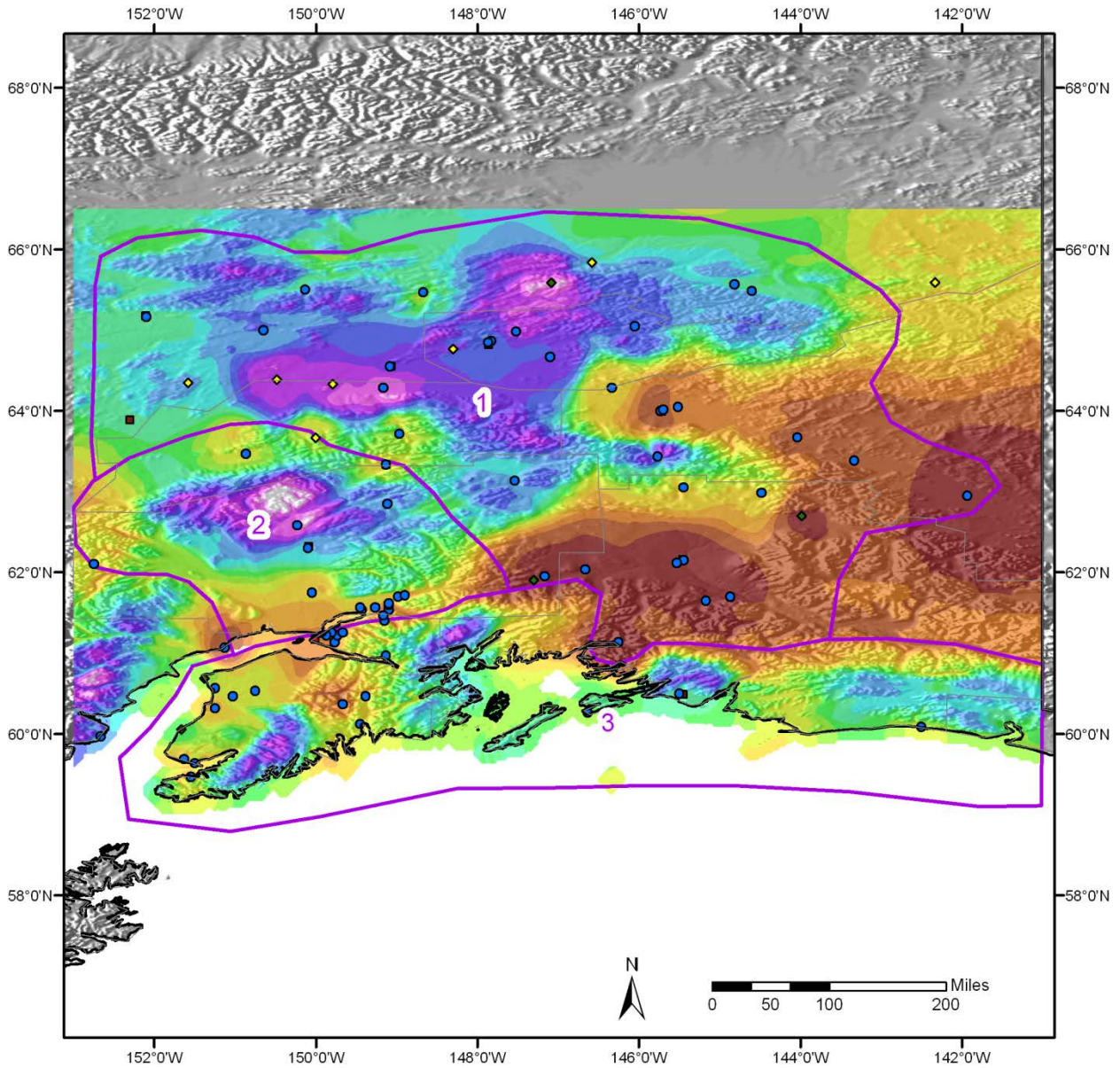
SPAS 1270 Fairbanks, AK Storm Analysis
August 11 - 16, 1967



Storm 1270 - Aug. 8 (1000 UTC) - Aug. 18 (0900 UTC), 1967
MAXIMUM AVERAGE DEPTH OF PRECIPITATION (INCHES)

Area (mi ²)	Duration (hours)													
	1	6	12	24	48	72	96	120	144	168	192	216	240	Total
0.3	0.58	2.04	3.37	5.36	7.54	8.55	9.1	9.71	10.21	10.5	10.56	10.65	10.66	10.66
1	0.55	1.96	3.26	5.18	7.32	8.3	8.83	9.35	9.89	10.19	10.22	10.33	10.33	10.33
10	0.55	1.96	3.26	5.18	7.32	8.3	8.83	9.35	9.89	10.19	10.22	10.33	10.33	10.33
25	0.55	1.96	3.26	5.18	7.32	8.3	8.83	9.35	9.89	10.19	10.22	10.33	10.33	10.33
50	0.55	1.96	3.26	5.18	7.32	8.3	8.83	9.35	9.89	10.19	10.22	10.33	10.33	10.33
100	0.53	1.94	3.16	5.07	7.18	8.16	8.59	9.35	9.75	9.94	9.96	10.2	10.26	10.26
150	0.51	1.91	3.16	5.04	7.1	8.07	8.54	9.16	9.63	9.8	9.88	10.12	10.18	10.18
200	0.5	1.88	3.06	4.91	6.98	7.98	8.49	9.12	9.59	9.79	9.86	10.05	10.11	10.11
300	0.48	1.84	3.04	4.83	6.85	7.67	8.39	9.1	9.51	9.79	9.83	9.9	9.95	9.95
400	0.47	1.79	2.93	4.71	6.69	7.64	8.26	8.9	9.41	9.62	9.65	9.79	9.85	9.85
500	0.46	1.75	2.91	4.66	6.54	7.64	8.21	8.84	9.33	9.5	9.51	9.72	9.78	9.78
1,000	0.44	1.69	2.77	4.51	6.37	7.44	7.81	8.4	8.98	9.13	9.17	9.42	9.5	9.50
2,000	0.41	1.62	2.59	4.27	6.11	7.1	7.51	7.92	8.56	8.71	8.97	9.07	9.18	9.18
5,000	0.37	1.5	2.42	3.91	5.67	6.32	7.1	7.36	7.92	8.21	8.28	8.53	8.59	8.59
10,000	0.33	1.32	2.17	3.55	5.04	5.99	6.45	6.83	7.37	7.56	7.83	7.95	7.97	7.97
20,000	0.28	1.14	1.9	3.03	4.29	5.05	5.63	6.07	6.49	6.89	6.95	7.12	7.17	7.17
50,000	0.16	0.73	1.32	2.23	3.11	3.89	4.3	4.51	4.86	5.24	5.38	5.46	5.5	5.50

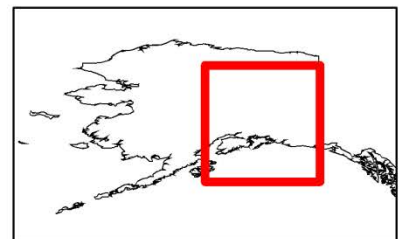




Total Storm (240-hr) Precipitation (inches)
August 8-17, 1967 - "The Great Fairbanks Flood"
SPAS #1270

Precipitation (inches)

0.00 - 0.50	3.01 - 3.50	7.01 - 8.00	● Daily
0.51 - 1.00	3.51 - 4.00	8.01 - 9.00	■ Hourly
1.01 - 1.50	4.01 - 4.50	9.01 - 10.00	■ Hourly Est. Psuedo
1.51 - 2.00	4.51 - 5.00	10.01 - 11.00	◆ Supplemental
2.01 - 2.50	5.01 - 6.00	11.01 - 12.00	◆ Supplemental Est.
2.51 - 3.00	6.01 - 7.00		

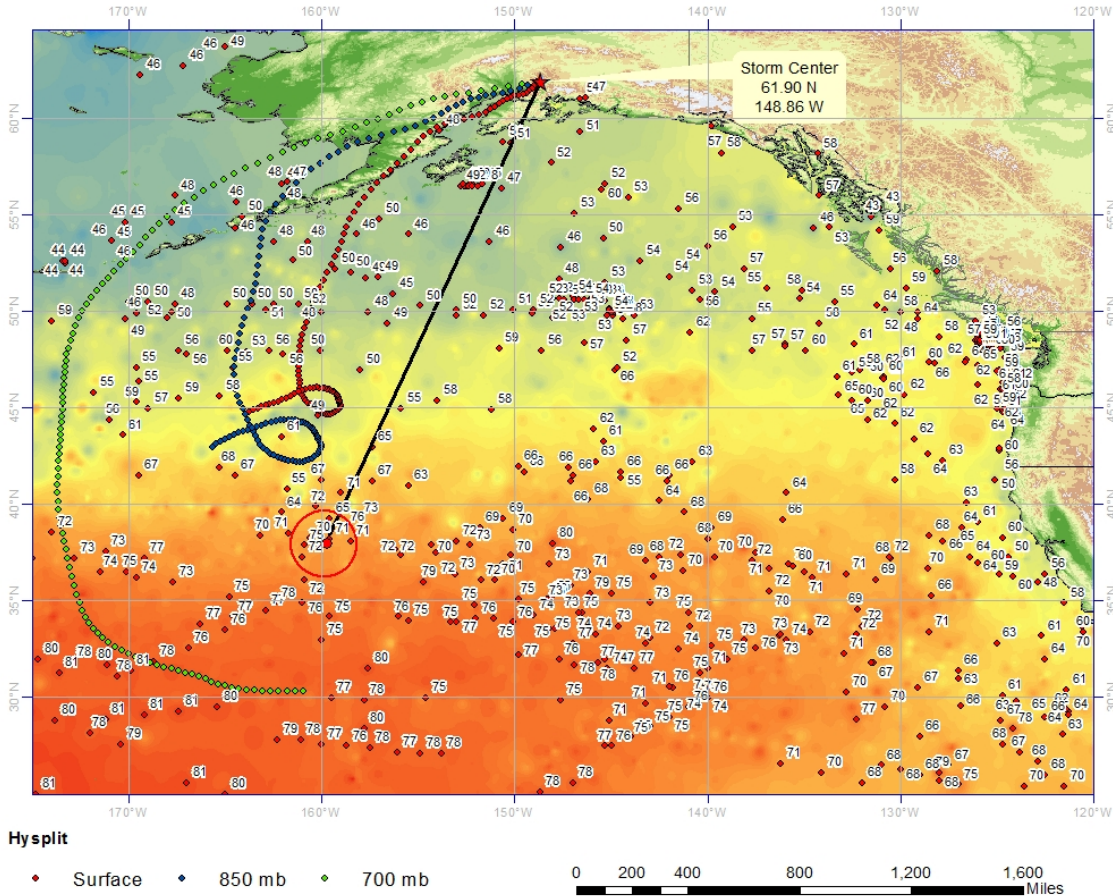


METSTAT, Inc. 02/04/2013

Sutton, AK, SPAS 1269 Zone 1 August 5, 1971

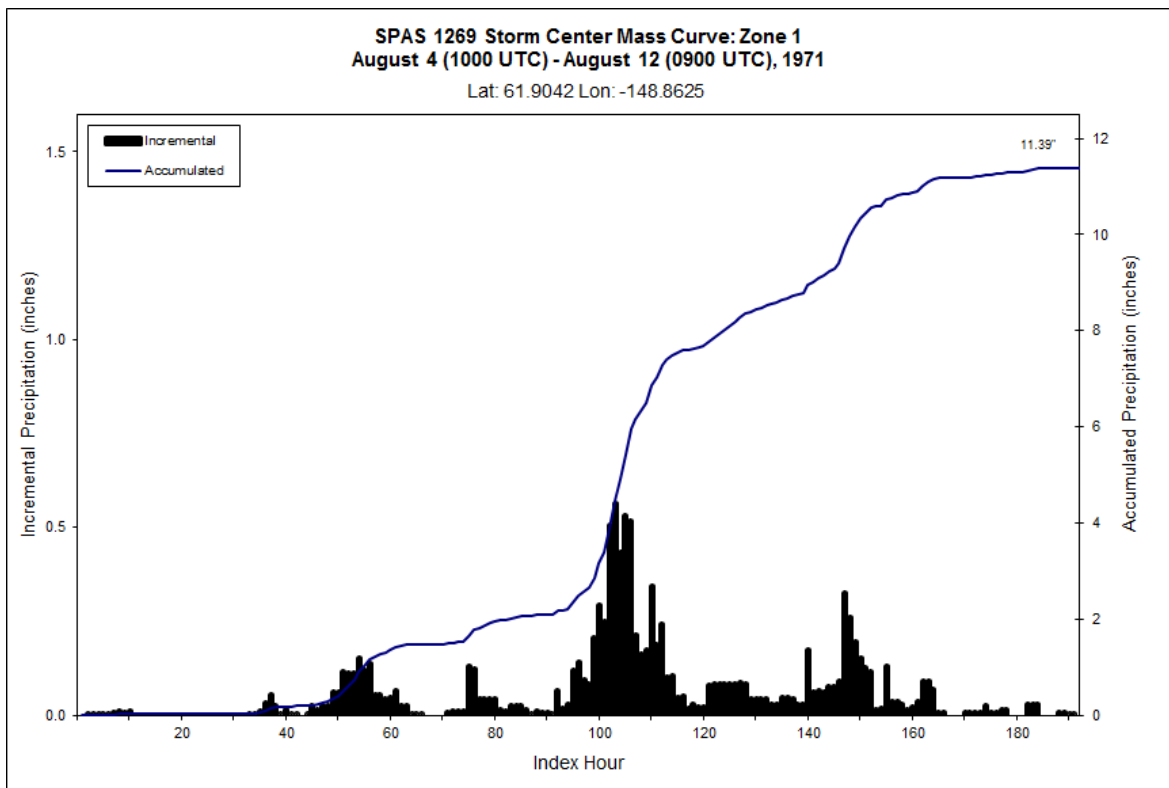
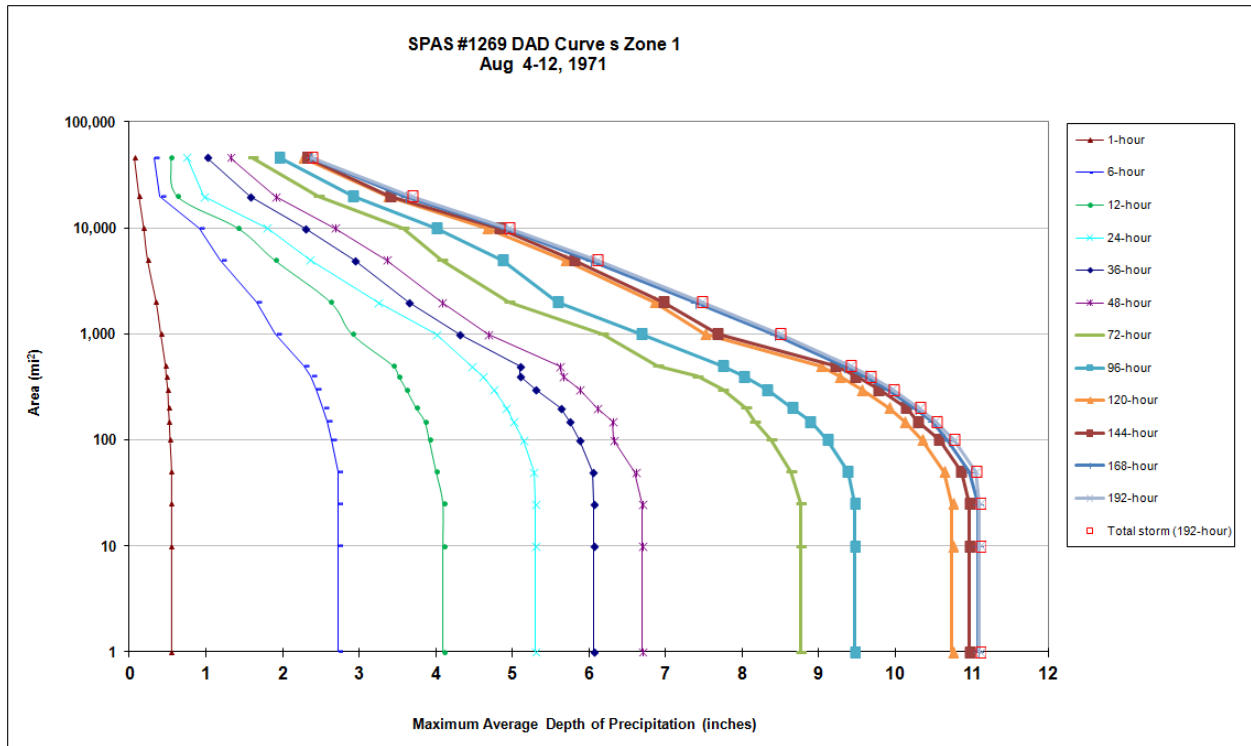
Storm Name: SPAS 1269, DAD Zone 1			Storm Adjustment for Susitna-Watana									
Storm Date: 8/5-11/1971												
AWA Analysis Date: 3/14/2014												
Temporal Transposition Date: 15-Aug												
Storm center location: Lat 61.90 N, Long 148.86 W			Moisture Inflow Direction: SSW @ 1715 miles									
Storm Rep SST location: 38.00 N, 159.70 W			Basin Elevation: 3,654 feet									
Transposition SST location: NA, NA			Storm Elevation: 6,385 feet									
Basin location: 42.76 N, 74.12 W			Storm Duration: 192 hours									
			Effective Barrier Height: 1,200 feet									
The storm representative SST is	71.0 F	with total precipitable water above sea level of	2.36	inches.								
The in-place maximum SST is	74.0 F	with total precipitable water above sea level of	2.73	inches.								
The transpositioned maximum SST is	NA	with total precipitable water above sea level of	4.44	inches.								
The in-place storm elevation is	6,385	which subtracts	1.15	inches of precipitable water at							71.0 F	
The in-place storm elevation is	6,385	which subtracts	1.28	inches of precipitable water at							74.0 F	
The transposition storm elevation is	3,654	which subtracts	XXX	inches of precipitable water at							NA	
The moisture inflow barrier height is	1,200	which subtracts	XXX	inches of precipitable water at							NA	
The in-place maximization factor is			1.20									
The transposition/elevation factor is			1.00									
The barrier adjustment factor is			#VALUE!									
The total adjustment factor is			#VALUE!									
Notes: Storm Rep Sst taken from a region between 35-40N and 160 to 164W where temperatures remained within a few degrees from the 4th through the 6th.												
Observed Storm Depth-Area-Duration												
	1 Hours	6 Hours	12 Hours	24 Hours	36 Hours	48 Hours	72 Hours	96 Hours	120 Hours	144 Hours	168 Hours	192 Hours
1 sq miles	0.6	2.7	4.1	5.3	6.1	6.7	8.8	9.5	10.7	11.0	11.1	11.1
10 sq miles	0.6	2.7	4.1	5.3	6.1	6.7	8.8	9.5	10.7	11.0	11.1	11.1
100 sq miles	0.5	2.6	3.9	5.1	5.9	6.3	8.4	9.1	10.4	10.6	10.7	10.8
200 sq miles	0.5	2.5	3.8	4.9	5.6	6.1	8.0	8.7	9.9	10.1	10.3	10.3
500 sq miles	0.5	2.3	3.5	4.5	5.1	5.6	6.9	7.8	9.0	9.2	9.3	9.4
1000 sq miles	0.4	1.9	2.9	4.0	4.3	4.7	6.2	6.7	7.5	7.7	8.4	8.5
2000 sq miles	0.4	1.7	2.6	3.2	3.7	4.1	5.0	5.6	6.9	7.0	7.4	7.5
5000 sq miles	0.2	1.2	1.9	2.4	2.9	3.4	4.1	4.9	5.7	5.8	6.0	6.1
10000 sq miles	0.2	0.9	1.4	1.8	2.3	2.7	3.6	4.0	4.7	4.8	4.9	5.0
20000 sq miles	0.1	0.4	0.6	1.0	1.6	1.9	2.5	2.9	3.4	3.4	3.6	3.7
Adjusted Storm Depth-Area-Duration												
	1 Hours	6 Hours	12 Hours	24 Hours	36 Hours	48 Hours	72 Hours	96 Hours	120 Hours	144 Hours	168 Hours	192 Hours
1 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
10 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
100 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
200 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
500 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
1000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
2000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
5000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
10000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
20000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Storm or Storm Center Name: SPAS 1269, DAD Zone 1												
Storm Date(s)			8/5-11/1971									
Storm Type			Synoptic									
Storm Location			61.90 N 148.86 W									
Storm Center Elevation			6385									
Precipitation Total & Duration (10 sq mi)			11.1 inches in 192 hours									
Storm Representative SST			71.0 F									
Storm Representative SST Location			38.00 N 159.70 W Aug									
In-place Maximum SST			74.0 F 74									
Moisture Inflow Vector			SSW @ 1715									
In-place Maximization Factor			1.20									
Temporal Transposition (Date)			15-Aug									
Transposition SST Location			NA NA									
Transposition Maximum SST			NA									
Transposition Adjustment Factor			1.00									
Average Basin Elevation			3,654									
Highest Elevation in Basin			13,131									
Inflow Barrier Height			1,200									
Elevation Adjustment Factor			#VALUE!									
Total Adjustment Factor			#VALUE!									

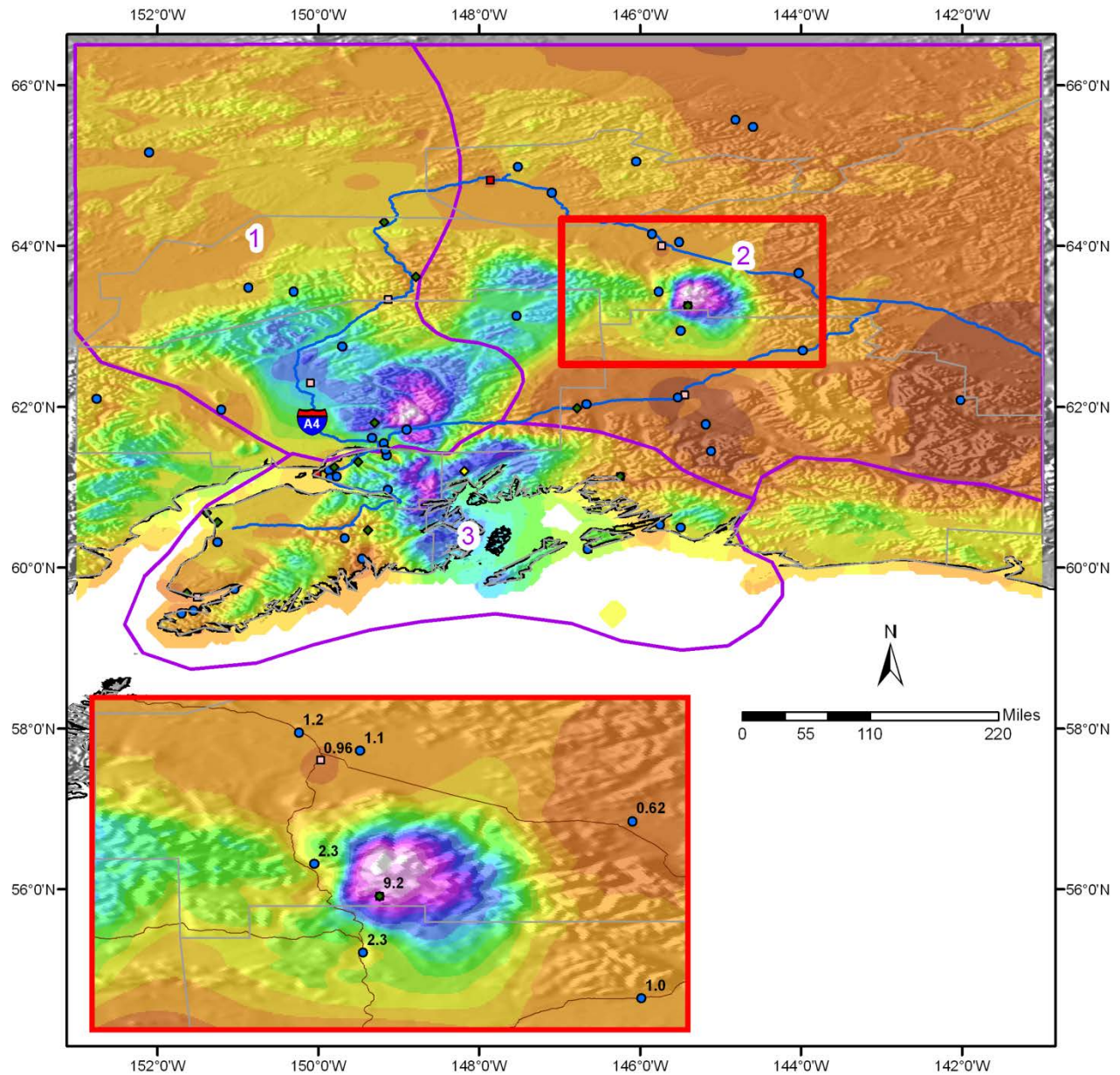
SPAS 1269
 August 4, 1971



Storm 1269 - Aug. 4 (1000 UTC) - Aug. 11 (0900 UTC), 1971
MAXIMUM AVERAGE DEPTH OF PRECIPITATION (INCHES)

Area (mi ²)	Duration (hours)												
	1	6	12	24	36	48	72	96	120	144	168	192	Total
0.2	0.56	2.8	4.19	5.44	6.23	6.87	8.99	9.7	10.97	11.24	11.35	11.39	11.39
1	0.55	2.72	4.1	5.3	6.06	6.7	8.76	9.47	10.74	10.97	11.08	11.10	11.10
10	0.55	2.72	4.1	5.3	6.06	6.7	8.76	9.47	10.74	10.97	11.08	11.10	11.10
25	0.55	2.72	4.1	5.3	6.06	6.7	8.76	9.47	10.74	10.97	11.08	11.10	11.10
50	0.55	2.72	4.01	5.28	6.04	6.6	8.63	9.38	10.63	10.86	10.97	11.05	11.05
100	0.53	2.64	3.92	5.14	5.88	6.32	8.38	9.11	10.35	10.57	10.68	10.76	10.76
150	0.52	2.58	3.86	5.01	5.75	6.31	8.16	8.89	10.11	10.29	10.47	10.52	10.52
200	0.51	2.53	3.75	4.92	5.63	6.1	8.04	8.65	9.91	10.14	10.25	10.31	10.31
300	0.5	2.44	3.62	4.75	5.3	5.87	7.74	8.32	9.56	9.78	9.89	9.96	9.96
400	0.48	2.37	3.52	4.61	5.1	5.66	7.41	8.02	9.27	9.48	9.59	9.67	9.67
500	0.47	2.28	3.45	4.47	5.1	5.62	6.9	7.75	9.02	9.22	9.32	9.41	9.41
1,000	0.41	1.91	2.91	4.01	4.3	4.68	6.18	6.68	7.51	7.68	8.41	8.49	8.49
2,000	0.35	1.66	2.63	3.24	3.65	4.08	4.96	5.59	6.85	6.97	7.38	7.47	7.47
5,000	0.24	1.19	1.9	2.36	2.94	3.36	4.07	4.87	5.69	5.8	6.01	6.10	6.10
10,000	0.19	0.91	1.42	1.8	2.29	2.68	3.57	4.01	4.66	4.83	4.9	4.95	4.95
20,000	0.13	0.4	0.63	0.97	1.58	1.9	2.46	2.92	3.37	3.4	3.59	3.68	3.68
46,397	0.07	0.32	0.54	0.75	1.02	1.32	1.61	1.96	2.27	2.32	2.36	2.38	2.38

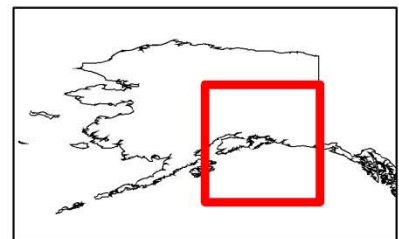




**Total Storm Precipitation (inches)
August 4-11, 1971 (192-hours)
SPAS #1269**

Precipitation (inches)

0.09	2.51 - 3.00	6.01 - 7.00	● Daily
0.10 - 0.50	3.01 - 3.50	7.01 - 8.00	◆ Supplemental
0.51 - 1.00	3.51 - 4.00	8.01 - 9.00	◇ Supplemental Est.
1.01 - 1.50	4.01 - 4.50	9.01 - 10.00	■ Hourly
1.51 - 2.00	4.51 - 5.00	10.01 - 11.00	□ Hourly Est.
2.01 - 2.50	5.01 - 6.00	11.01 - 12.00	▣ Hourly Pseudo
			■ Hourly Est. Pseudo
			□ DAD Zones

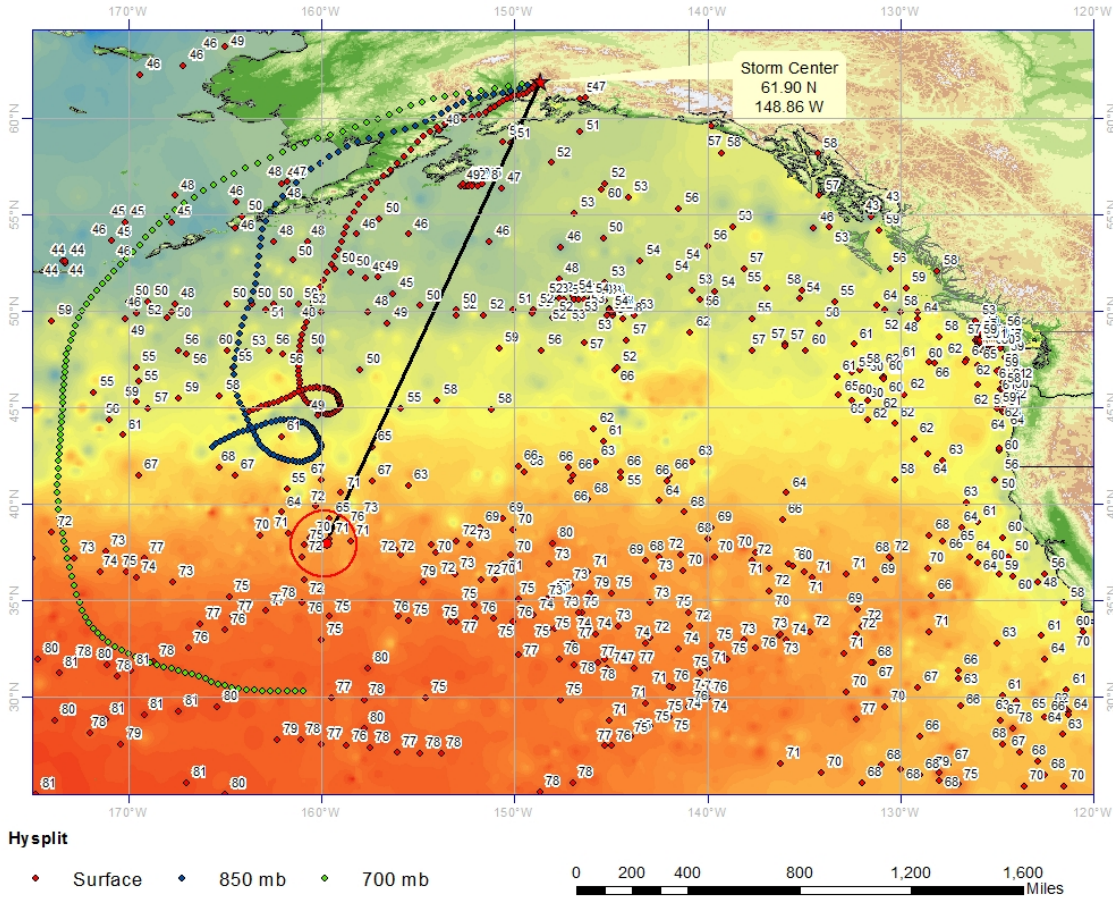


MetStat, Inc. 05/28/2013

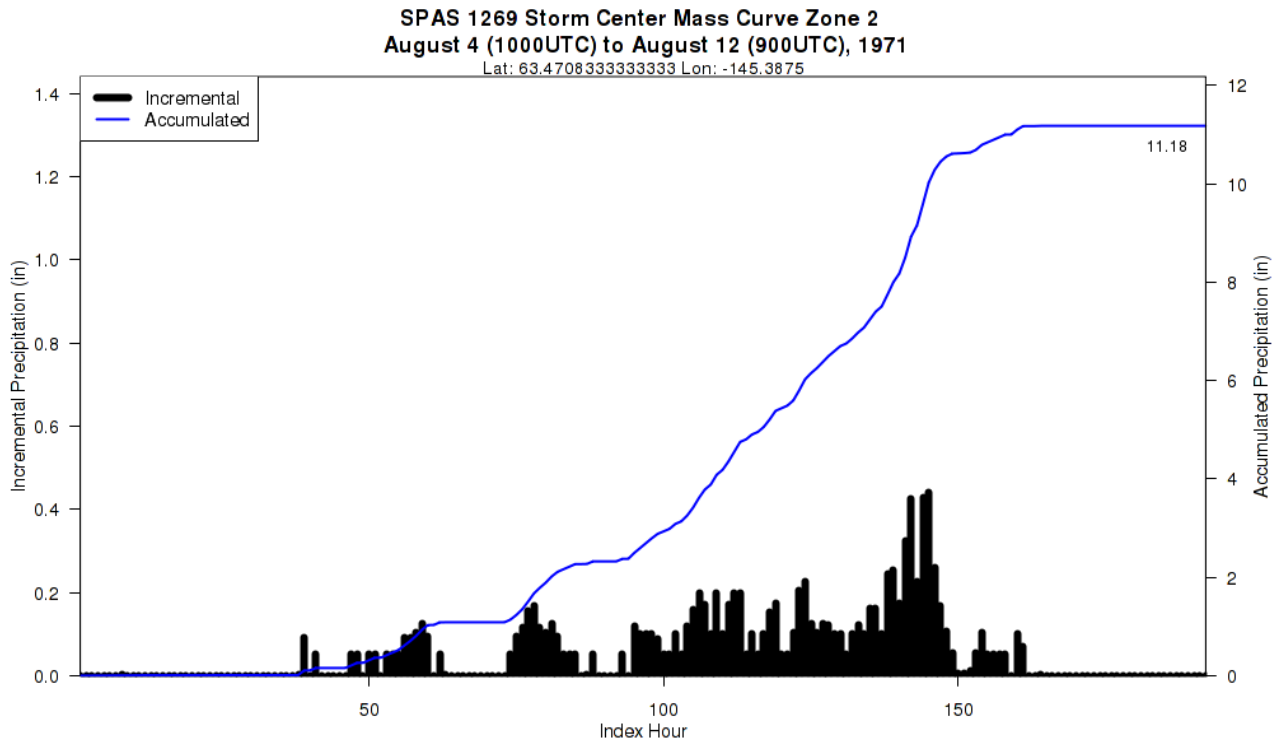
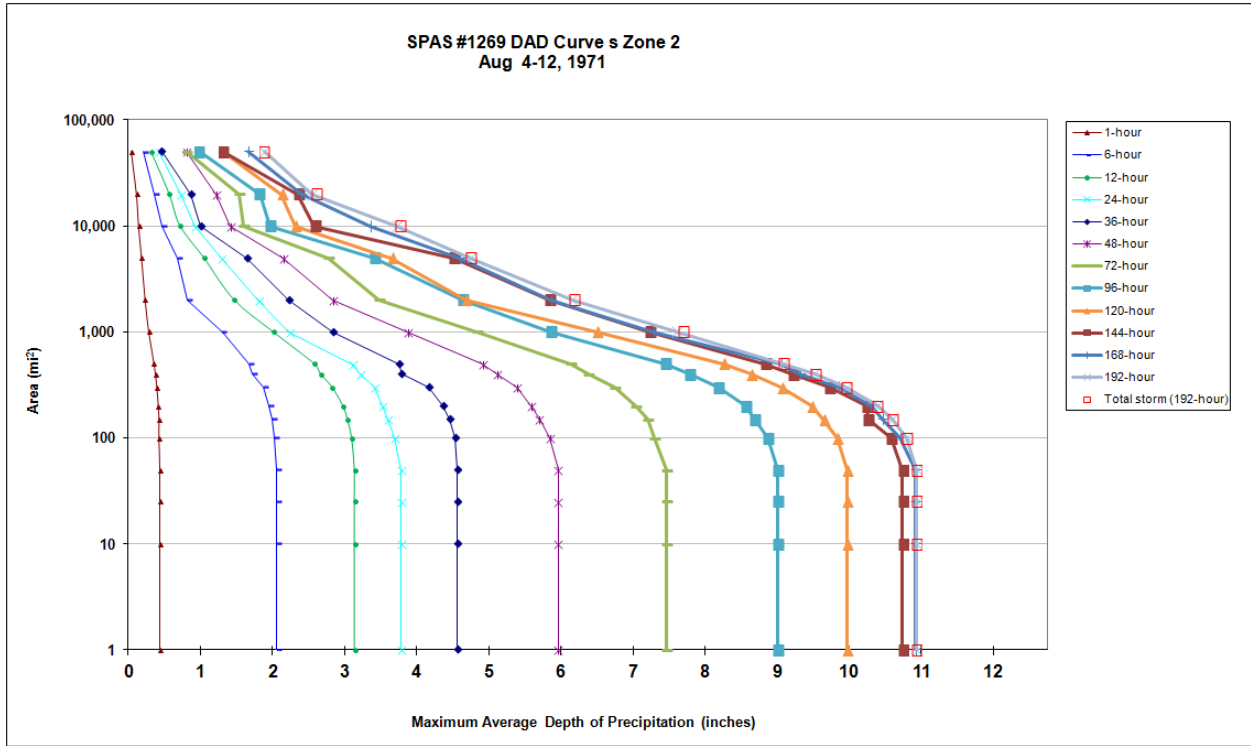
Black Rapids, AK SPAS 1269 Zone 2
August 5, 1971

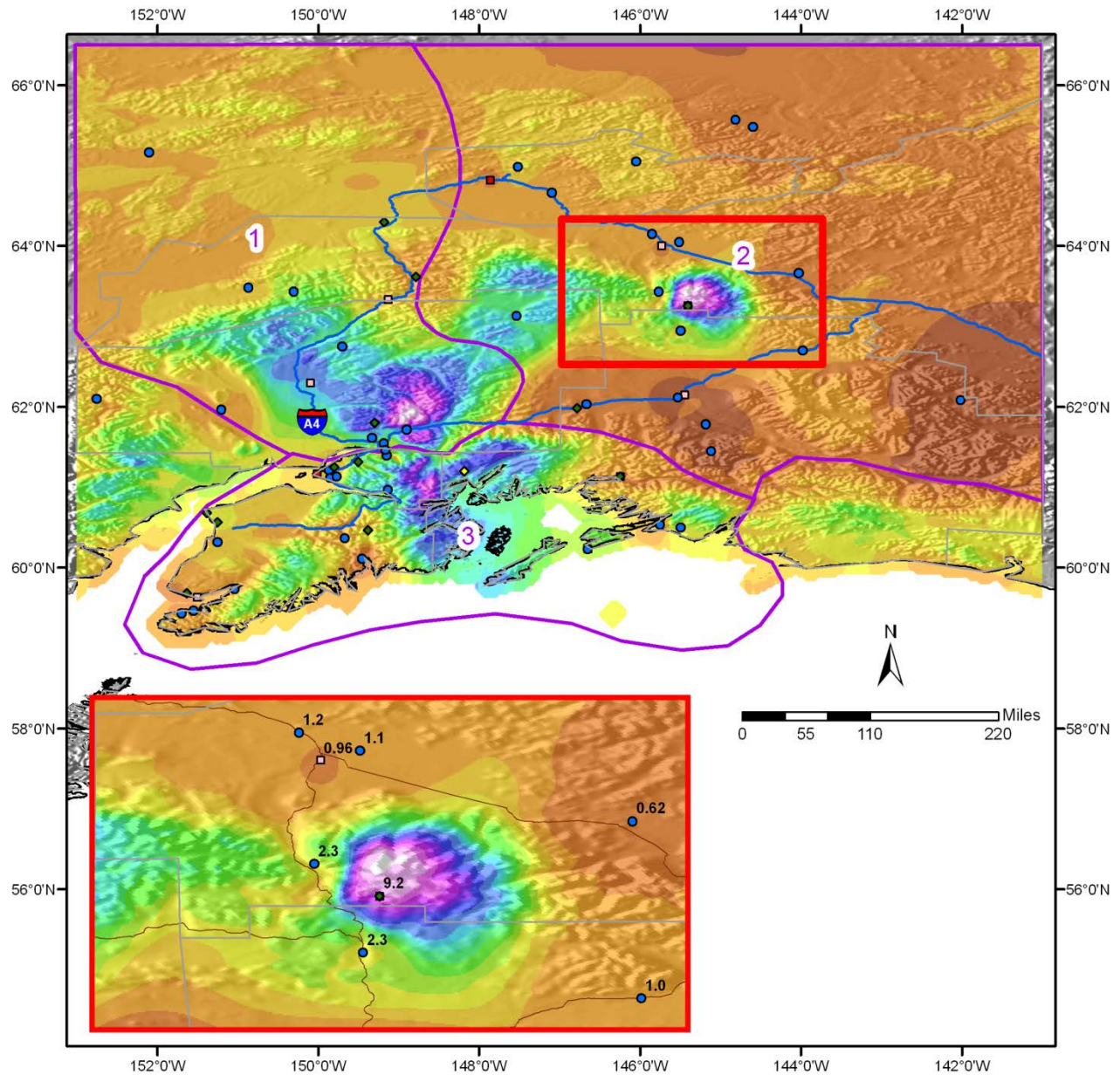
Storm Name: SPAS 1269, DAD Zone 2			Storm Adjustment for Susitna-Watana									
Storm Date: 8/5-11/1971												
AWA Analysis Date: 3/14/2014												
Temporal Transposition Date: 15-Aug												
Storm center location: Lat 63.47 N, Long 145.48 W			Moisture Inflow Direction: SSW @ 1675 miles									
Storm Rep SST location: 38.00 N, 159.70 W			Basin Elevation: 3,654 feet									
Transposition SST location: NA, NA			Storm Elevation: 6,235 feet									
Basin location: 42.76 N, 74.12 W			Storm Duration: 192 hours									
			Effective Barrier Height: 1,200 feet									
The storm representative SST is	71.0 F	with total precipitable water above sea level of	2.36	inches.								
The in-place maximum SST is	74.0 F	with total precipitable water above sea level of	2.73	inches.								
The transpositioned maximum SST is	NA	with total precipitable water above sea level of	4.44	inches.								
The in-place storm elevation is	6,235	which subtracts	1.13	inches of precipitable water at		71.0 F						
The in-place storm elevation is	6,235	which subtracts	1.26	inches of precipitable water at		74.0 F						
The transposition storm elevation at	3,654	which subtracts	X.XX	inches of precipitable water at		NA						
The moisture inflow barrier height is	1,200	which subtracts	X.XX	inches of precipitable water at		NA						
The in-place maximization factor is			1.20									
The transposition/elevation factor is			1.00									
The barrier adjustment factor is			#VALUE!									
The total adjustment factor is			#VALUE!									
Notes: Storm Rep Sst taken from a region between 35-40N and 160 to 164W where temperatures remained within a few degrees from the 4th through the 6th.												
Observed Storm Depth-Area-Duration												
	1 Hours	6 Hours	12 Hours	24 Hours	36 Hours	48 Hours	72 Hours	96 Hours	120 Hours	144 Hours	168 Hours	192 Hours
1 sq miles	0.4	2.1	3.1	4.6	6.0	7.5	9.0	10.0	10.7	10.9	10.9	10.9
10 sq miles	0.4	2.1	3.1	4.6	6.0	7.5	9.0	10.0	10.7	10.9	10.9	10.9
100 sq miles	0.4	2.0	3.1	4.5	5.8	7.3	8.9	9.8	10.6	10.7	10.8	10.8
200 sq miles	0.4	2.0	3.0	4.4	5.6	7.0	8.6	9.5	10.2	10.3	10.4	10.4
500 sq miles	0.4	1.7	2.6	3.8	4.9	6.1	7.5	8.3	8.8	9.1	9.1	9.1
1000 sq miles	0.3	1.3	2.0	2.8	3.9	4.8	5.9	6.5	7.2	7.3	7.6	7.7
2000 sq miles	0.2	0.8	1.5	2.2	2.8	3.5	4.6	4.7	5.8	5.9	6.2	6.2
5000 sq miles	0.2	0.7	1.1	1.6	2.2	2.8	3.4	3.7	4.5	4.6	4.7	4.7
10000 sq miles	0.1	0.5	0.7	1.0	1.4	1.6	2.0	2.3	2.6	3.4	3.7	3.8
20000 sq miles	0.1	0.4	0.6	0.9	1.2	1.5	1.8	2.1	2.4	2.4	2.5	2.6
Adjusted Storm Depth-Area-Duration												
	1 Hours	6 Hours	12 Hours	24 Hours	36 Hours	48 Hours	72 Hours	96 Hours	120 Hours	144 Hours	168 Hours	192 Hours
1 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
10 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
100 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
200 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
500 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
1000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
2000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
5000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
10000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
20000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Storm or Storm Center Name			SPAS 1269, DAD Zone 2									
Storm Date(s)			8/5-11/1971									
Storm Type			Synoptic									
Storm Location			63.47 N 145.48 W									
Storm Center Elevation			6255									
Precipitation Total & Duration (10 sq mi)			11.4 inches in 192 hours									
Storm Representative SST			71.0 F									
Storm Representative SST Location			38.00 N 159.70 W Aug									
In-place Maximum SST			74.0 F 74									
Moisture Inflow Vector			SSW @ 1675									
In-place Maximization Factor			1.20									
Temporal Transposition (Date)			15-Aug									
Transposition SST Location			NA NA									
Transposition Maximum SST			NA									
Transposition Adjustment Factor			1.00									
Average Basin Elevation			3,654									
Highest Elevation in Basin			13,131									
Inflow Barrier Height			1,200									
Elevation Adjustment Factor			#VALUE!									
Total Adjustment Factor			#VALUE!									

SPAS 1269
 August 4, 1971



Storm 1269 - Aug. 4 (1000 UTC) - Aug. 11 (0900 UTC), 1971														
MAXIMUM AVERAGE DEPTH OF PRECIPITATION (INCHES)														
Area (mi ²)	Duration (hours)													
	1	6	12	18	24	36	48	72	96	120	144	168	192	Total
0.20	0.44	2.11	3.21	3.86	3.86	4.69	6.11	7.64	9.23	10.21	11.02	11.17	11.18	11.18
1	0.43	2.06	3.14	3.78	3.78	4.56	5.96	7.47	9.01	9.97	10.74	10.92	10.93	10.93
10	0.43	2.06	3.14	3.78	3.78	4.56	5.96	7.47	9.01	9.97	10.74	10.92	10.93	10.93
25	0.43	2.06	3.14	3.78	3.78	4.56	5.96	7.47	9.01	9.97	10.74	10.92	10.93	10.93
50	0.43	2.06	3.14	3.78	3.78	4.56	5.96	7.47	9.01	9.97	10.74	10.92	10.93	10.93
100	0.42	2.03	3.10	3.69	3.69	4.53	5.84	7.29	8.87	9.83	10.58	10.70	10.79	10.79
150	0.42	2.00	3.04	3.6	3.60	4.45	5.70	7.20	8.69	9.64	10.26	10.46	10.60	10.60
200	0.41	1.95	2.98	3.52	3.52	4.36	5.58	7.04	8.57	9.48	10.24	10.30	10.39	10.39
300	0.39	1.87	2.83	3.41	3.41	4.16	5.39	6.75	8.18	9.06	9.72	9.85	9.95	9.95
400	0.37	1.72	2.67	3.21	3.21	3.79	5.11	6.38	7.78	8.64	9.21	9.32	9.52	9.52
500	0.35	1.68	2.58	3.1	3.10	3.75	4.91	6.14	7.45	8.26	8.83	9.05	9.08	9.09
1,000	0.28	1.30	2.01	2.23	2.23	2.83	3.87	4.83	5.86	6.50	7.23	7.28	7.61	7.69
2,000	0.23	0.82	1.47	1.8	1.80	2.23	2.83	3.48	4.64	4.68	5.84	5.86	6.16	6.18
5,000	0.18	0.68	1.05	1.29	1.29	1.64	2.15	2.78	3.41	3.65	4.51	4.59	4.74	4.74
10,000	0.14	0.47	0.72	0.92	0.92	1.00	1.42	1.59	1.97	2.31	2.58	3.35	3.72	3.77
20,000	0.11	0.36	0.57	0.72	0.72	0.87	1.21	1.53	1.82	2.12	2.35	2.40	2.54	2.61
50,000	0.04	0.21	0.32	0.42	0.42	0.46	0.81	0.81	0.98	1.31	1.31	1.66	1.88	1.88

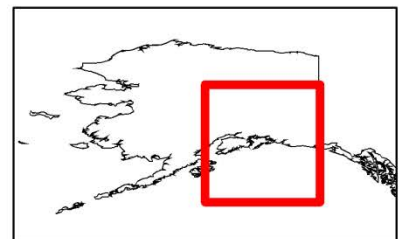




**Total Storm Precipitation (inches)
August 4-11, 1971 (192-hours)
SPAS #1269**

Precipitation (inches)

0.09	2.51 - 3.00	6.01 - 7.00	● Daily
0.10 - 0.50	3.01 - 3.50	7.01 - 8.00	◆ Supplemental
0.51 - 1.00	3.51 - 4.00	8.01 - 9.00	◇ Supplemental Est.
1.01 - 1.50	4.01 - 4.50	9.01 - 10.00	■ Hourly
1.51 - 2.00	4.51 - 5.00	10.01 - 11.00	□ Hourly Est.
2.01 - 2.50	5.01 - 6.00	11.01 - 12.00	▣ Hourly Pseudo
			■ Hourly Est. Pseudo
			□ DAD Zones



MetStat, Inc. 05/28/2013

Mt. Geist, AK, SPAS 1268 Zone 2
July 24, 1980

Storm Name: SPAS 1268-AK Zone 2	Storm Adjustment for Susitna-Watana
Storm Date: July 24-31, 1980	
AWA Analysis Date: 3/14/2014	

Temporal Transposition Date	15-Aug		Moisture Inflow Direction	SSW @ 530	miles
Storm Center Location	Lat	Long	Basin Average Elevation	NA	feet
	63.64 N	146.97 W	Storm Center Elevation	8,215	feet
Storm Rep SST Location	56.00 N	148.54 W	Storm Analysis Duration	24	hours
Transposition SST Location	NA	NA	Effective Barrier Height	NA	feet
Basin Location	*	*			

The storm representative SST is	56.0 F	with total precipitable water above sea level of	1.13	inches.
The in-place maximum SST is	58.0 F	with total precipitable water above sea level of	1.25	inches.
The transpositioned maximum SST is	NA	with total precipitable water above sea level of	3.22	inches.
The in-place storm elevation is	8,215	feet which subtracts 0.77 inches of precipitable water at	56.0 F	
The in-place storm elevation is	8,215	feet which subtracts 0.84 inches of precipitable water at	58.0 F	
The transposition storm elevation at	NA	feet which subtracts NA inches of precipitable water at	NA	
The moisture inflow barrier height is	NA	feet which subtracts NA inches of precipitable water at	NA	

The in-place maximization factor is	1.14
The transposition factor is	#VALUE!
The elevation/barrier adjustment factor is	#VALUE!
The total adjustment factor is	#VALUE!

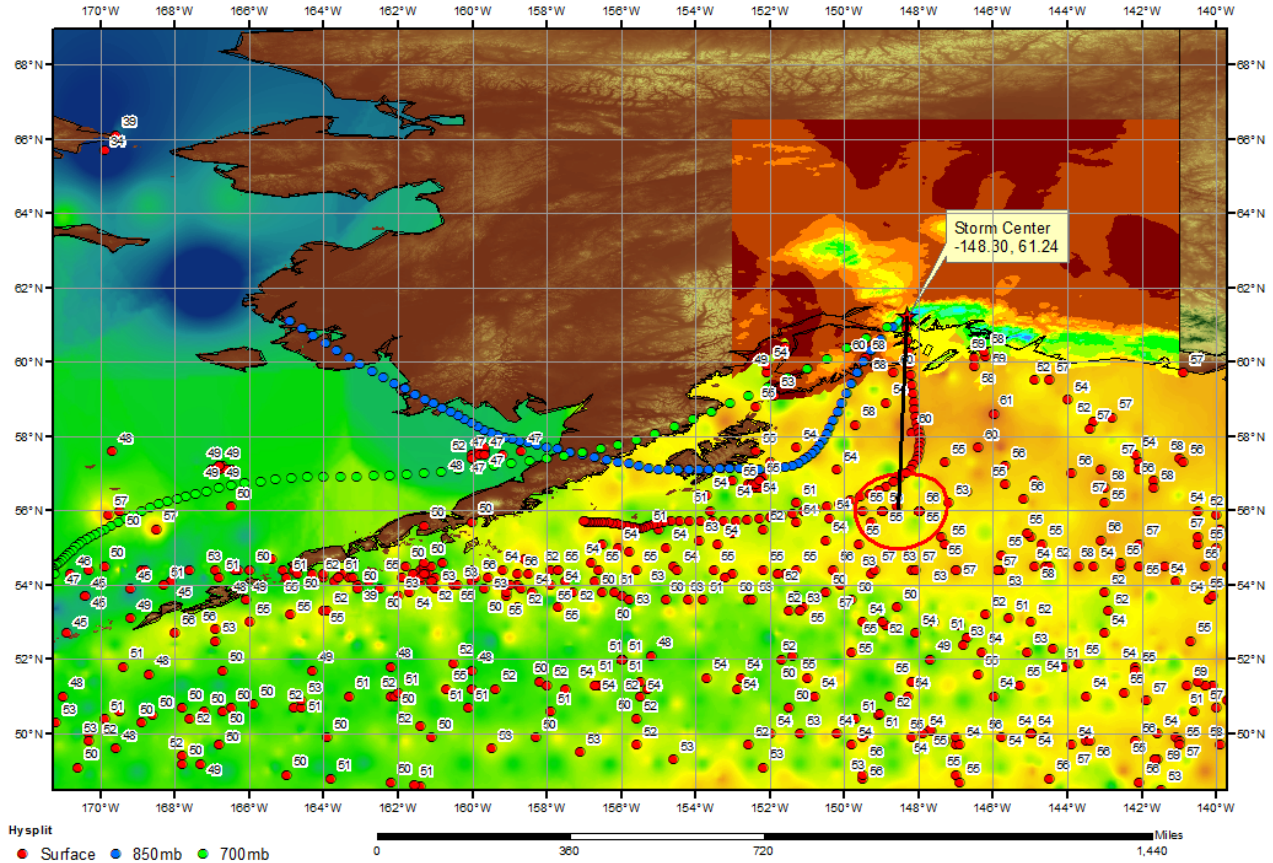
Notes: Storm representative SST value was based on SST values for July 25-27 along the surface HYSPLIT trajectory data. Values were selected in region where temperature did not vary more than a 1-degree over a large area and was as closest to the storm center.

Observed Storm Depth-Area-Duration	1 Hours	6 Hours	12 Hours	18 Hours	24 Hours	36 Hours	48 Hours	72 Hours	96 Hours	120 Hours	144 Hours	168 Hours	192 Hours
1 sq miles	0.3	0.7	1.0	1.4	1.6	2.0	2.4	3.4	3.8	4.3	4.9	5.1	5.1
10 sq miles	0.3	0.7	1.0	1.4	1.6	2.0	2.4	3.4	3.8	4.3	4.9	5.1	5.1
100 sq miles	0.3	0.7	1.0	1.4	1.6	2.0	2.3	3.3	3.8	4.3	4.8	5.0	5.0
200 sq miles	0.3	0.7	1.0	1.3	1.5	2.0	2.3	3.2	3.6	4.2	4.7	4.8	4.9
500 sq miles	0.3	0.6	0.9	1.2	1.4	1.9	2.2	3.0	3.4	3.9	4.4	4.6	4.6
1000 sq miles	0.3	0.5	0.8	1.1	1.3	1.7	2.1	2.7	3.1	3.6	3.8	4.1	4.2
2000 sq miles	0.2	0.5	0.7	0.9	1.1	1.6	1.8	2.3	2.7	3.1	3.4	3.7	3.7
5000 sq miles	0.2	0.4	0.5	0.7	0.9	1.3	1.5	1.8	2.1	2.6	2.8	2.9	3.0
10000 sq miles	0.1	0.2	0.4	0.5	0.7	1.0	1.2	1.3	1.7	2.1	2.3	2.4	2.5
20000 sq miles	0.1	0.2	0.3	0.4	0.5	0.7	0.8	1.1	1.3	1.6	1.7	1.9	1.9

Adjusted Storm Depth-Area-Duration	1 Hours	6 Hours	12 Hours	18 Hours	24 Hours	36 Hours	48 Hours	72 Hours	96 Hours	120 Hours	144 Hours	168 Hours	192 Hours
1 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
10 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
100 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
200 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
500 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
1000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
2000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
5000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
10000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
20000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!

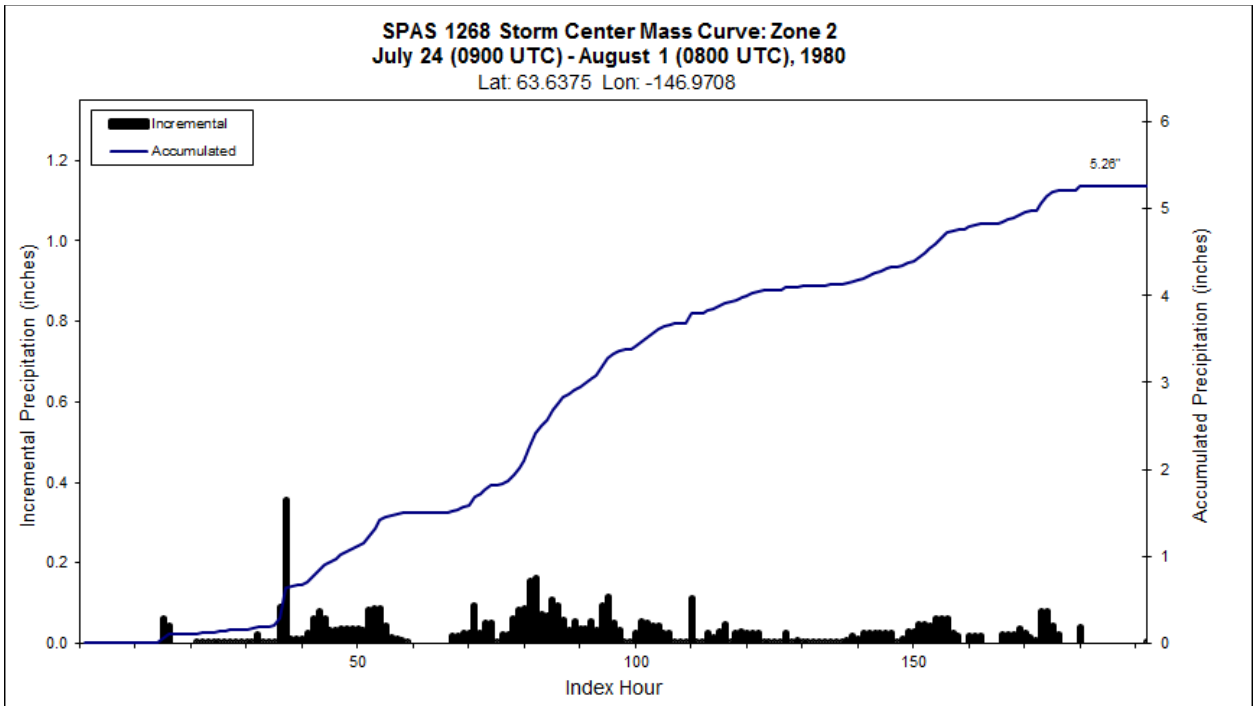
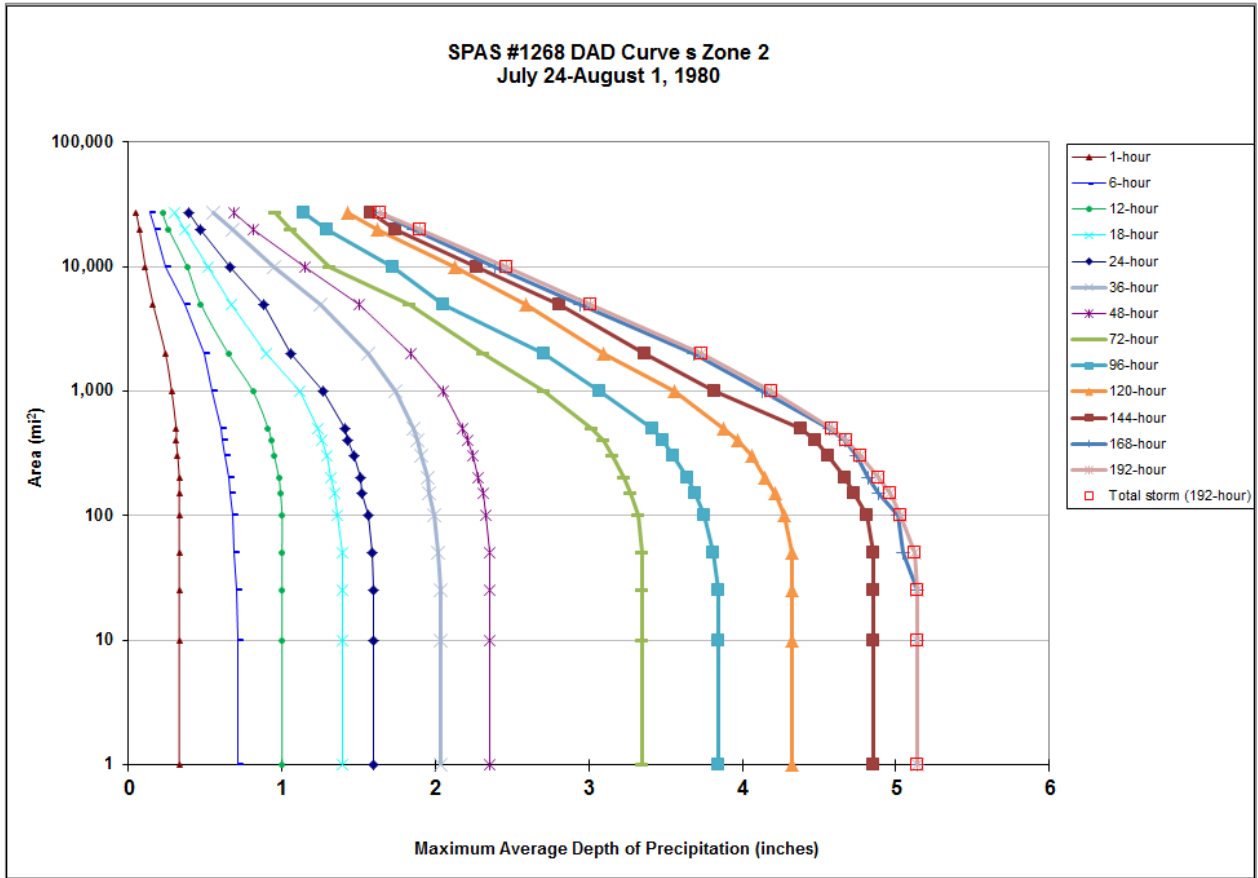
Storm or Storm Center Name	SPAS 1268-AK Zone 2	
Storm Date(s)	July 24-31, 1980	
Storm Type	Synoptic	
Storm Location	63.64 N	146.97 W
Storm Center Elevation	8,215	
Precipitation Total & Duration (10 sq mi)	5.26 inches at 192 hours	
Storm Representative SST	56.0 F	
Storm Representative SST Location	56.00 N	148.54 W
Maximum SST	58.0 F	July Aug
Moisture Inflow Vector	SSW @ 530	
In-place Maximization Factor	1.14	
Temporal Transposition (Date)	15-Aug	
Transposition SST Location	NA	NA
Transposition Maximum SST	NA	
Transposition Adjustment Factor	#VALUE!	
Average Basin Elevation	NA	
Highest Elevation in Basin	NA	
Inflow Barrier Height	NA	
Elevation Adjustment Factor	#VALUE!	
Total Adjustment Factor	#VALUE!	

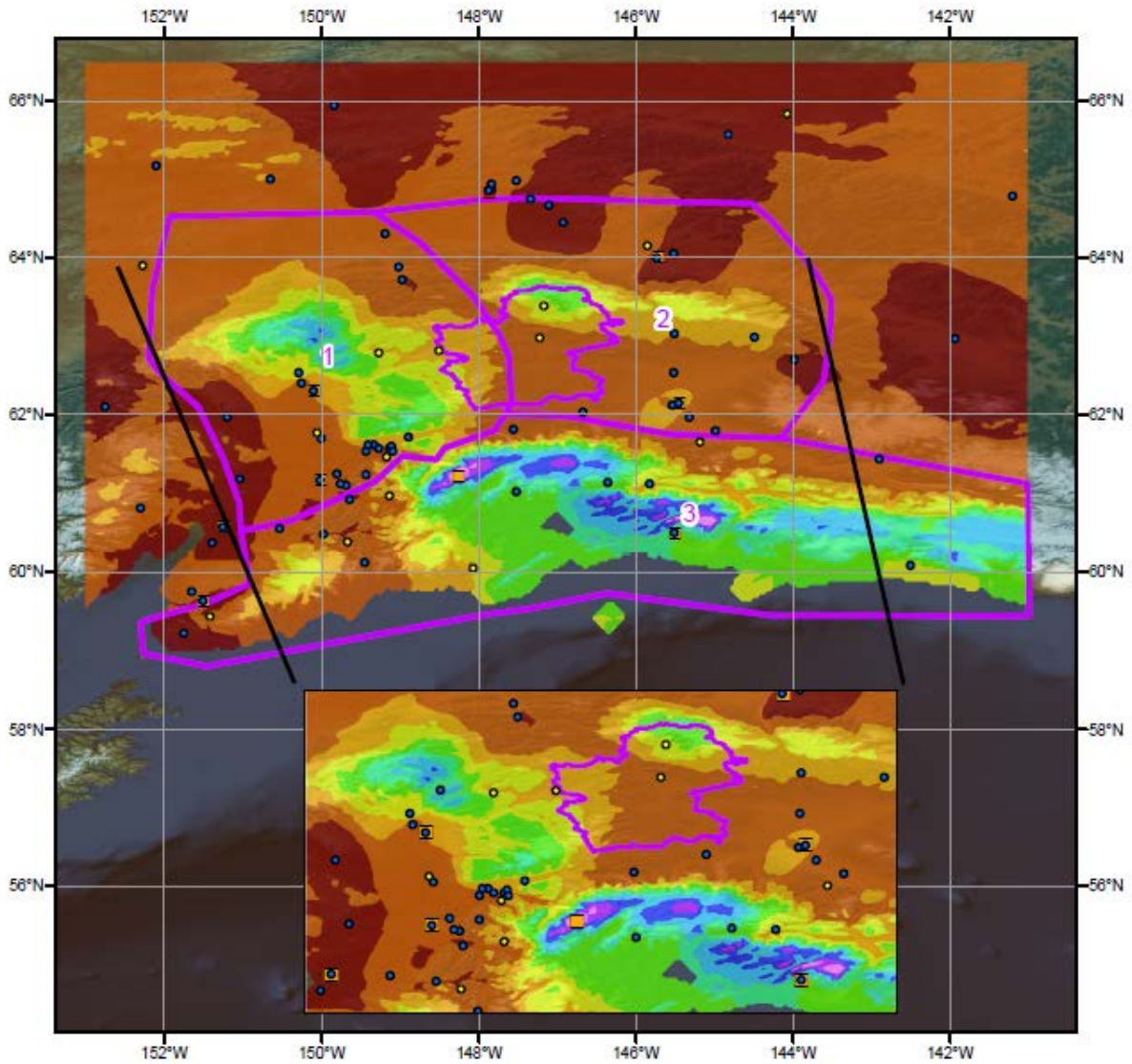
SPAS 1268 Gate AK Storm Analysis
 July 25 - 27, 1980



Storm 1268 - Jul. 24 (0900 UTC) - Aug. 1 (0800 UTC), 1980
MAXIMUM AVERAGE DEPTH OF PRECIPITATION (INCHES)

Area (mi ²)	Duration (hours)													
	1	6	12	18	24	36	48	72	96	120	144	168	192	Total
0.2	0.36	0.71	1.05	1.42	1.63	2.08	2.41	3.48	3.92	4.47	5.02	5.25	5.26	5.26
1	0.33	0.71	1	1.39	1.6	2.03	2.35	3.35	3.84	4.32	4.85	5.14	5.14	5.14
10	0.33	0.71	1	1.39	1.6	2.03	2.35	3.35	3.84	4.32	4.85	5.14	5.14	5.14
25	0.33	0.7	1	1.39	1.6	2.03	2.35	3.35	3.84	4.32	4.85	5.14	5.14	5.14
50	0.33	0.69	1	1.39	1.59	2.02	2.35	3.35	3.81	4.32	4.85	5.05	5.12	5.12
100	0.33	0.68	1	1.36	1.56	1.99	2.33	3.32	3.75	4.27	4.81	5.01	5.03	5.03
150	0.33	0.66	0.99	1.34	1.52	1.96	2.31	3.27	3.69	4.21	4.73	4.89	4.96	4.96
200	0.33	0.65	0.98	1.32	1.51	1.95	2.28	3.23	3.64	4.15	4.67	4.82	4.89	4.89
300	0.32	0.63	0.95	1.29	1.47	1.91	2.24	3.15	3.55	4.06	4.56	4.74	4.77	4.77
400	0.31	0.61	0.93	1.26	1.43	1.88	2.21	3.09	3.48	3.97	4.47	4.67	4.68	4.68
500	0.31	0.6	0.91	1.23	1.41	1.86	2.18	3.02	3.41	3.88	4.38	4.57	4.58	4.58
1,000	0.28	0.54	0.81	1.12	1.27	1.74	2.05	2.71	3.07	3.56	3.82	4.13	4.19	4.19
2,000	0.24	0.49	0.65	0.9	1.06	1.56	1.84	2.31	2.71	3.09	3.36	3.68	3.73	3.73
5,000	0.16	0.37	0.47	0.67	0.88	1.25	1.5	1.83	2.05	2.59	2.81	2.94	3.01	3.01
10,000	0.11	0.24	0.38	0.52	0.66	0.95	1.15	1.31	1.72	2.13	2.27	2.39	2.46	2.46
20,000	0.07	0.17	0.26	0.37	0.47	0.68	0.81	1.06	1.29	1.62	1.74	1.86	1.9	1.90
26,863	0.05	0.14	0.22	0.3	0.39	0.55	0.69	0.96	1.14	1.43	1.58	1.64	1.64	1.64

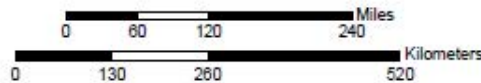




Total Storm (192-hr) Precipitation (inches)
July 24-31, 1980
SPAS 1268

Gauges

- Daily
- Hourly
- Hourly Pseudo
- Supplemental



Precipitation (inches)

0.00 - 1.00	3.01 - 4.00	6.01 - 7.00	9.01 - 10.00
1.01 - 2.00	4.01 - 5.00	7.01 - 8.00	10.01 - 11.00
2.01 - 3.00	5.01 - 6.00	8.01 - 9.00	

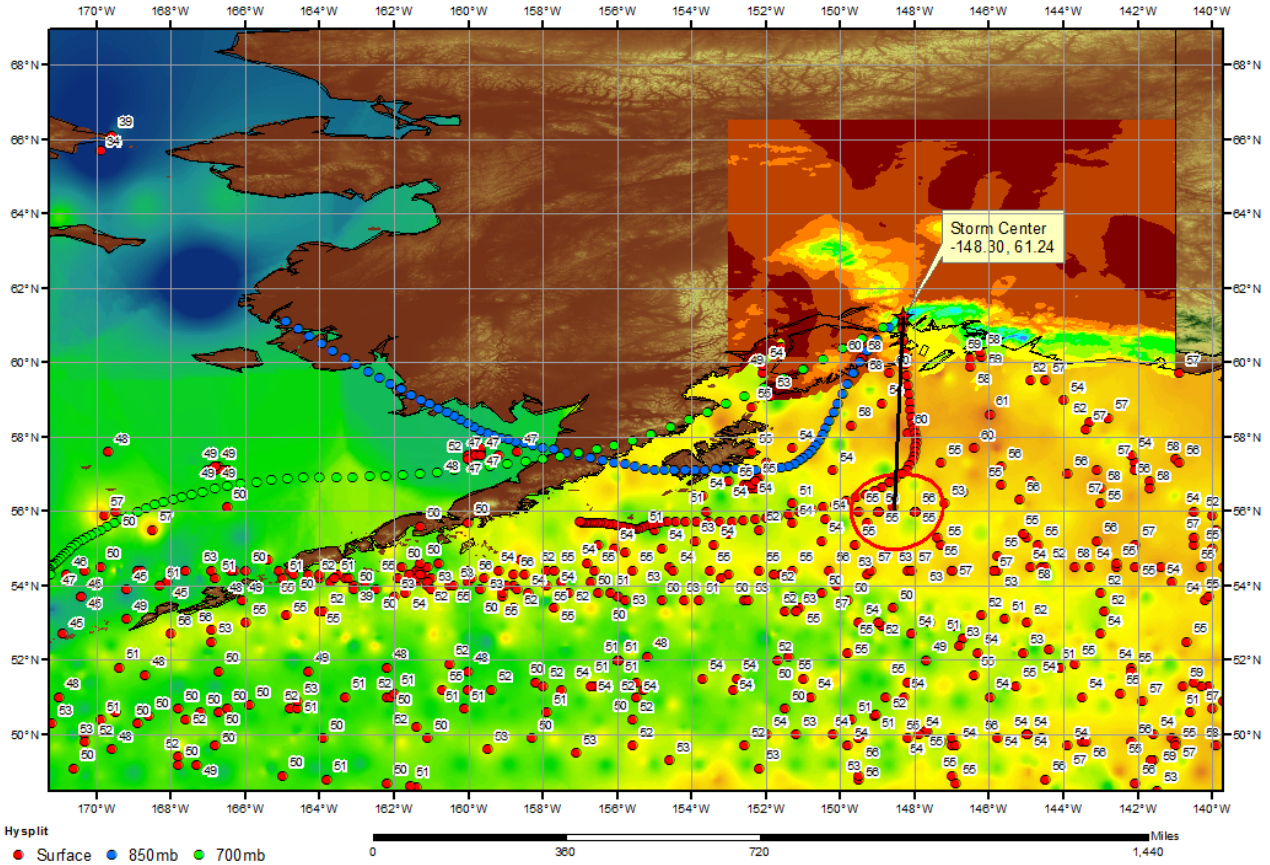


4/30/2013

Denali NP, SPAS 1268 Zone 1
July 24, 1980

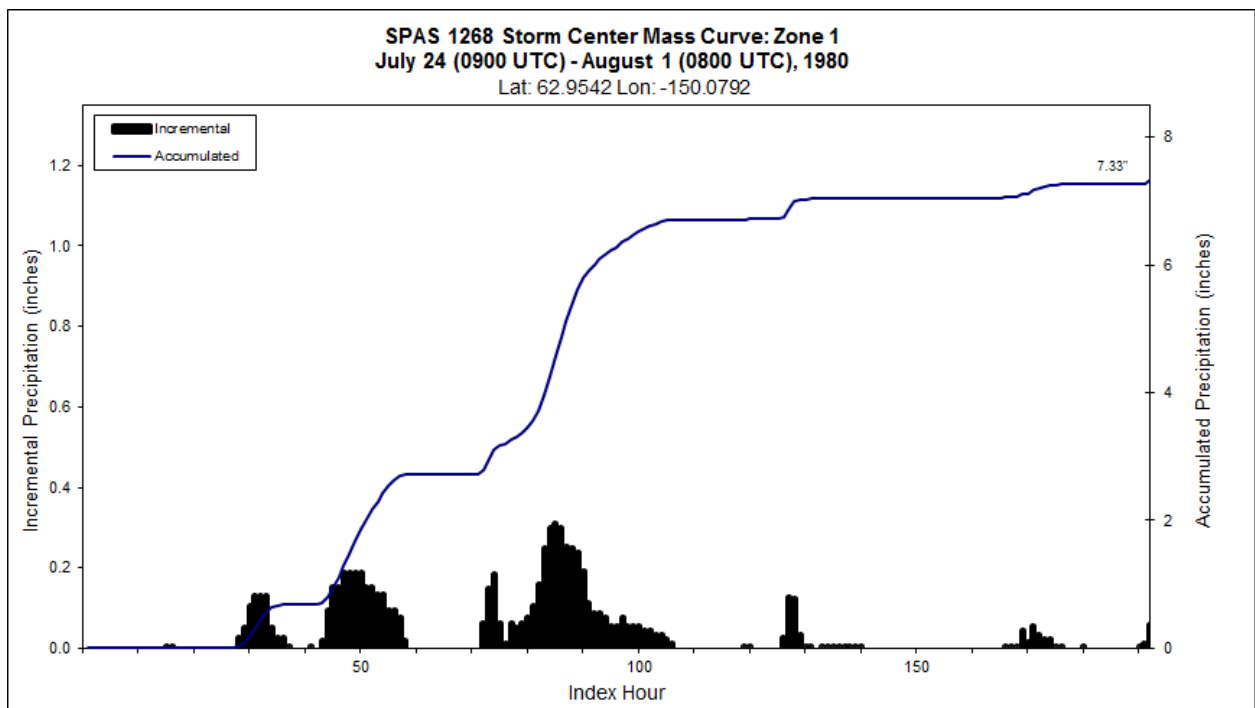
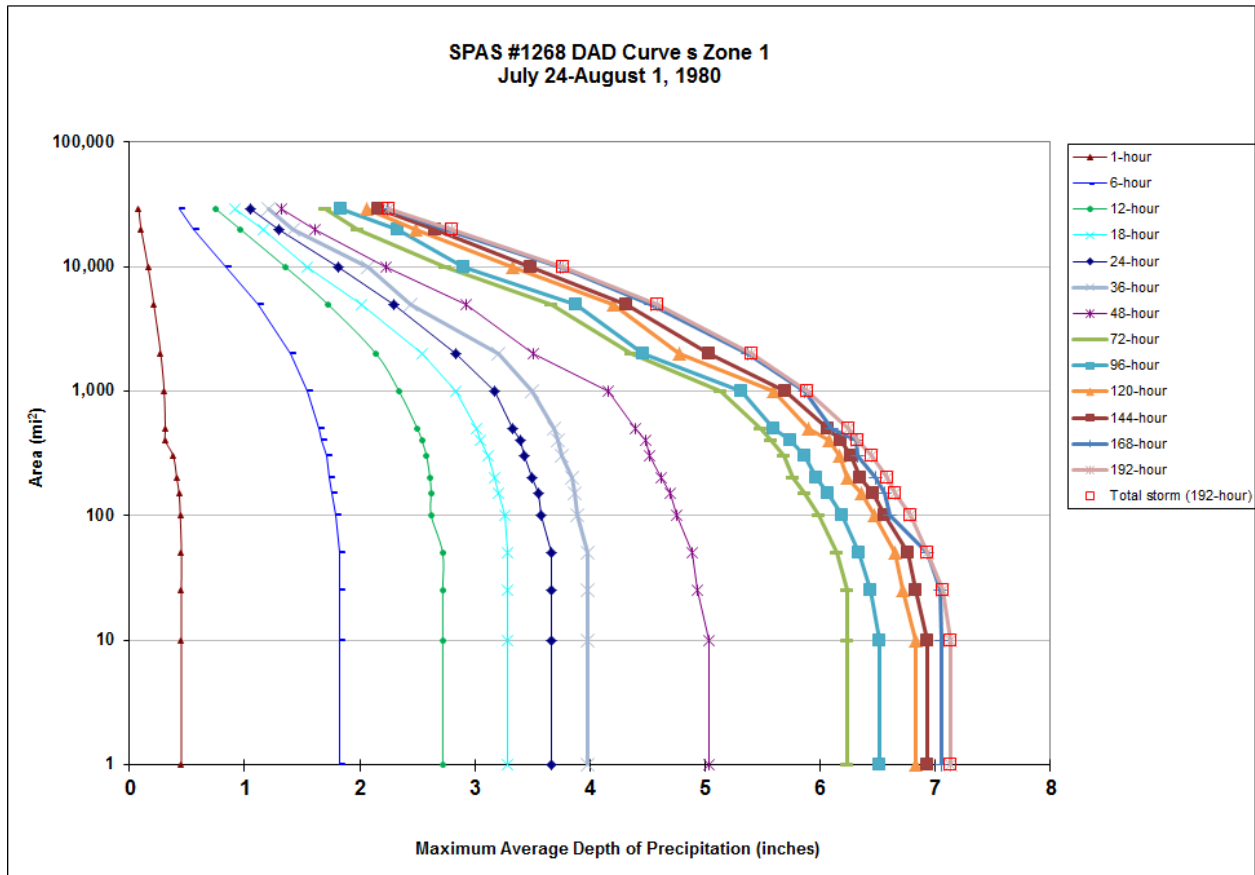
Storm Name: SPAS 1268-AK Zone 1			Storm Adjustment for Susitna-Watana										
Storm Date: July 24-31, 1980													
AWA Analysis Date: 3/14/2014													
Temporal Transposition Date 15-Aug													
Storm Center Location Lat Long 62.95 N 150.08 W			Moisture Inflow Direction SSE @ 485 miles										
Storm Rep SST Location 56.00 N 148.54 W			Basin Average Elevation NA feet										
Transposition SST Location NA NA			Storm Center Elevation 4,750 feet										
Basin Location * *			Storm Analysis Duration 24 hours										
			Effective Barrier Height NA feet										
The storm representative SST is 56.0 F			with total precipitable water above sea level of							1.13 inches.			
The in-place maximum SST is 58.0 F			with total precipitable water above sea level of							1.25 inches.			
The transposition maximum SST is NA			with total precipitable water above sea level of							3.22 inches.			
The in-place storm elevation is 4,750 feet			which subtracts 0.52 inches		of precipitable water at					56.0 F			
The in-place storm elevation is 4,750 feet			which subtracts 0.56 inches		of precipitable water at					58.0 F			
The transposition storm elevation is NA feet			which subtracts NA inches		of precipitable water at					NA			
The moisture inflow barrier height is NA feet			which subtracts NA inches		of precipitable water at					NA			
The in-place maximization factor is 1.13			Notes: Storm representative SST value was based on SST values for July 25-27 along the surface HYSPLIT trajectory data. Values were selected in region where temperature did not vary more than a 1-degree over a large area and was as closest to the storm center.										
The transposition factor is #VALUE!													
The elevation barrier adjustment factor is #VALUE!													
The total adjustment factor is #VALUE!													
Observed Storm Depth-Area-Duration													
	1 Hours	6 Hours	12 Hours	18 Hours	24 Hours	36 Hours	48 Hours	72 Hours	96 Hours	120 Hours	144 Hours	168 Hours	192 Hours
1 sq miles	0.5	1.8	2.7	3.3	3.7	4.0	5.0	6.2	6.5	6.8	6.9	7.1	7.1
10 sq miles	0.5	1.8	2.7	3.3	3.7	4.0	5.0	6.2	6.5	6.8	6.9	7.1	7.1
100 sq miles	0.4	1.8	2.6	3.3	3.6	3.9	4.8	6.0	6.2	6.5	6.6	6.6	6.8
200 sq miles	0.4	1.7	2.6	3.2	3.5	3.9	4.6	5.8	6.0	6.2	6.4	6.5	6.6
500 sq miles	0.3	1.6	2.5	3.0	3.3	3.7	4.4	5.5	5.6	5.9	6.1	6.1	6.3
1000 sq miles	0.3	1.6	2.3	2.8	3.2	3.5	4.2	5.1	5.3	5.6	5.7	5.9	5.9
2000 sq miles	0.3	1.4	2.1	2.5	2.8	3.2	3.5	4.4	4.5	4.8	5.0	5.4	5.4
5000 sq miles	0.2	1.1	1.7	2.0	2.3	2.4	2.9	3.7	3.9	4.2	4.3	4.5	4.6
10000 sq miles	0.2	0.8	1.4	1.6	1.8	2.1	2.2	2.8	2.9	3.3	3.5	3.7	3.8
20000 sq miles	0.1	0.6	1.0	1.2	1.3	1.4	1.6	2.0	2.3	2.5	2.7	2.8	2.8
Adjusted Storm Depth-Area-Duration													
	1 Hours	6 Hours	12 Hours	18 Hours	24 Hours	36 Hours	48 Hours	72 Hours	96 Hours	120 Hours	144 Hours	168 Hours	192 Hours
1 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
10 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
100 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
200 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
500 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
1000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
2000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
5000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
10000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
20000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Storm or Storm Center Name SPAS 1268-AK Zone 1													
Storm Date(s) July 24-31, 1980													
Storm Type Synoptic													
Storm Location 62.95 N 150.08 W													
Storm Center Elevation 4,750													
Precipitation Total & Duration (10 sq mi) 7.33 inches at 192 hours													
Storm Representative SST 56.0 F													
Storm Representative SST Location 56.00 N 148.54 W July Aug													
Maximum SST 58.0 F 56 58													
Moisture Inflow Vector SSE @ 485													
In-place Maximization Factor 1.13													
Temporal Transposition (Date) 15-Aug													
Transposition SST Location NA NA													
Transposition Maximum SST NA													
Transposition Adjustment Factor #VALUE!													
Average Basin Elevation NA													
Highest Elevation in Basin NA													
Inflow Barrier Height NA													
Elevation Adjustment Factor #VALUE!													
Total Adjustment Factor #VALUE!													

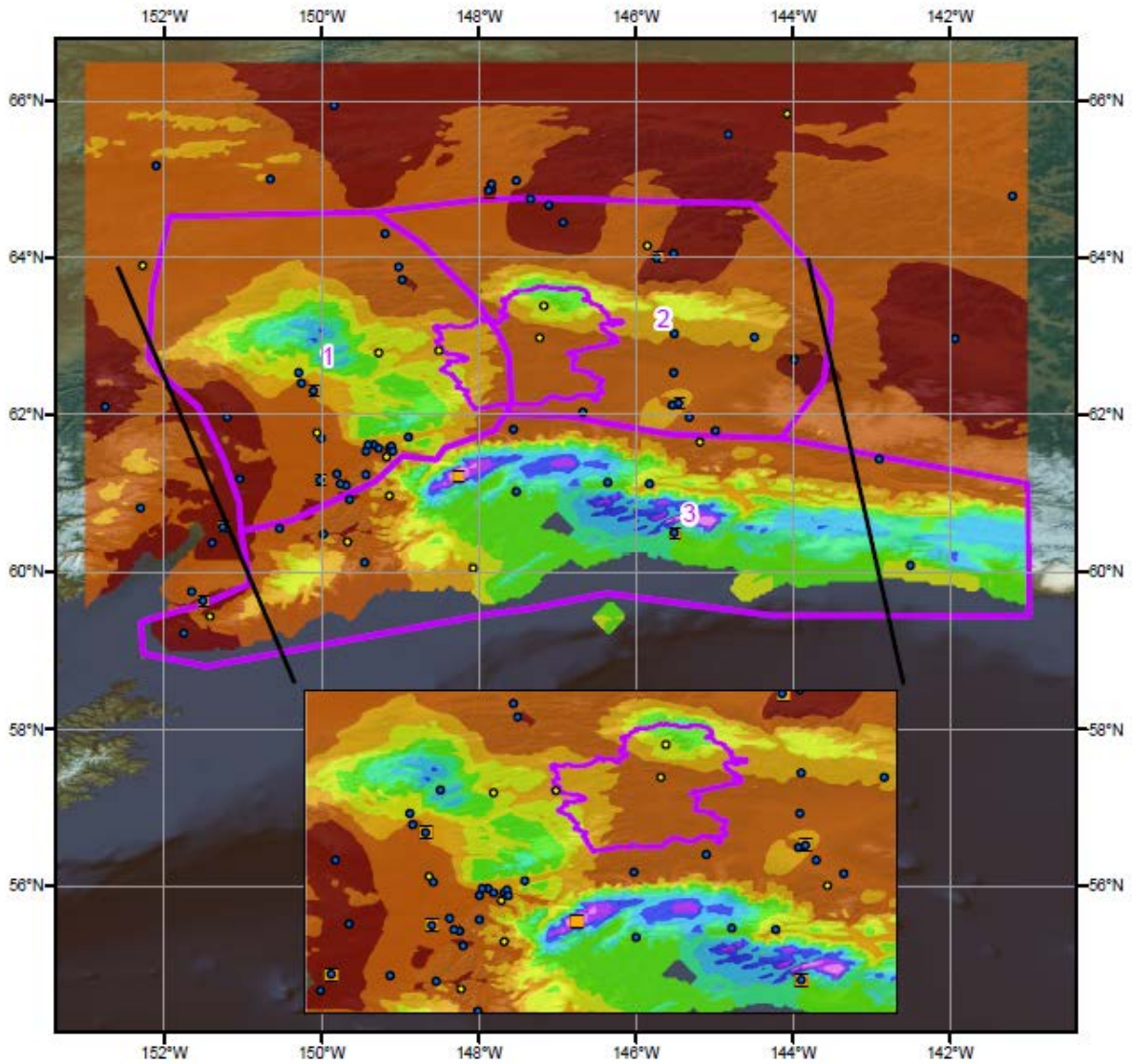
SPAS 1268 Gate AK Storm Analysis
July 25 - 27, 1980



Storm 1268 - Jul. 24 (0900 UTC) - Aug. 1 (0800 UTC), 1980
MAXIMUM AVERAGE DEPTH OF PRECIPITATION (INCHES)

Area (mi ²)	Duration (hours)													
	1	6	12	18	24	36	48	72	96	120	144	168	192	Total
0.2	0.49	1.85	2.8	3.37	3.74	4.08	5.2	6.49	6.71	7.04	7.17	7.33	7.33	7.33
1	0.45	1.82	2.72	3.28	3.66	3.98	5.03	6.23	6.51	6.83	6.93	7.05	7.13	7.13
10	0.45	1.82	2.72	3.28	3.66	3.98	5.03	6.23	6.51	6.83	6.93	7.05	7.13	7.13
25	0.45	1.82	2.72	3.28	3.66	3.98	4.93	6.23	6.44	6.72	6.83	7.04	7.06	7.06
50	0.45	1.82	2.72	3.28	3.66	3.98	4.89	6.14	6.34	6.65	6.76	6.93	6.93	6.93
100	0.44	1.79	2.62	3.26	3.58	3.89	4.75	5.99	6.19	6.47	6.56	6.61	6.78	6.78
150	0.43	1.76	2.62	3.21	3.55	3.87	4.7	5.87	6.07	6.36	6.46	6.56	6.65	6.65
200	0.41	1.74	2.61	3.17	3.5	3.85	4.62	5.76	5.97	6.24	6.35	6.48	6.58	6.58
300	0.38	1.71	2.58	3.11	3.43	3.75	4.52	5.68	5.86	6.17	6.27	6.33	6.45	6.45
400	0.31	1.67	2.54	3.05	3.4	3.72	4.48	5.57	5.74	6.08	6.18	6.31	6.33	6.33
500	0.31	1.64	2.5	3.01	3.33	3.69	4.39	5.48	5.6	5.9	6.07	6.1	6.25	6.25
1,000	0.3	1.55	2.34	2.83	3.17	3.5	4.16	5.14	5.31	5.6	5.7	5.86	5.89	5.89
2,000	0.27	1.4	2.14	2.54	2.83	3.2	3.51	4.36	4.46	4.78	5.03	5.37	5.4	5.40
5,000	0.21	1.12	1.72	2.02	2.3	2.44	2.93	3.67	3.88	4.2	4.32	4.53	4.58	4.58
10,000	0.16	0.84	1.35	1.55	1.81	2.07	2.23	2.75	2.9	3.33	3.49	3.74	3.77	3.77
20,000	0.1	0.56	0.96	1.16	1.3	1.42	1.61	1.98	2.33	2.49	2.66	2.75	2.8	2.80
28,940	0.08	0.43	0.75	0.92	1.05	1.21	1.32	1.7	1.84	2.06	2.16	2.24	2.25	2.25





Total Storm (192-hr) Precipitation (inches)
July 24-31, 1980
SPAS 1268

Gauges

- Daily
- Hourly
- Hourly Pseudo
- Supplemental



Precipitation (inches)

0.00 - 1.00	3.01 - 4.00	6.01 - 7.00	9.01 - 10.00
1.01 - 2.00	4.01 - 5.00	7.01 - 8.00	10.01 - 11.00
2.01 - 3.00	5.01 - 6.00	8.01 - 9.00	



4/30/2013

Denali NP, AWA, SPAS 1267 Zone 1 October 8, 1986

Storm Name:	Seward, AK SPAS 1267-DAD Zone 1	Storm Adjustment for Susitna-Watana
Storm Date:	10/8-12/1986	
AWA Analysis Date:	3/4/2014	

Temporal Transposition Date	25-Sep		Moisture Inflow Direction:	SSE @ 1620	miles
Storm center location	Lat	Long	Basin Elevation	3,650	feet
	62.93 N	151.14 W	Storm Elevation	5,850	feet
Storm Rep SST location	40.80 N	137.70 W	Storm Duration	24hr	feet
Transposition SST location	NA	NA			
Basin location	62.84 N	147.37 W			

The storm representative SST is	66.0 F	with total precipitable water above sea level of	1.86	inches.
The in-place maximum SST is	68.5 F	with total precipitable water above sea level of	2.10	inches.
The transpositioned maximum SST is	NA	with total precipitable water above sea level of	4.08	inches.
The in-place storm elevation is	5,850	which subtracts	0.725	inches of precipitable water at 66.0 F
The in-place storm elevation is	5,850	which subtracts	0.795	inches of precipitable water at 68.5 F
The transposition basin elevation at	3,650	which subtracts	xx	inches of precipitable water at NA
The inflow barrier/basin elevation height is	1,483	which subtracts	xx	inches of precipitable water at NA

The in-place storm maximization factor is	1.15
The transposition/elevation to basin factor is	#VALUE!
The barrier adjustment factor is	#VALUE!
The total adjustment factor is	#VALUE!

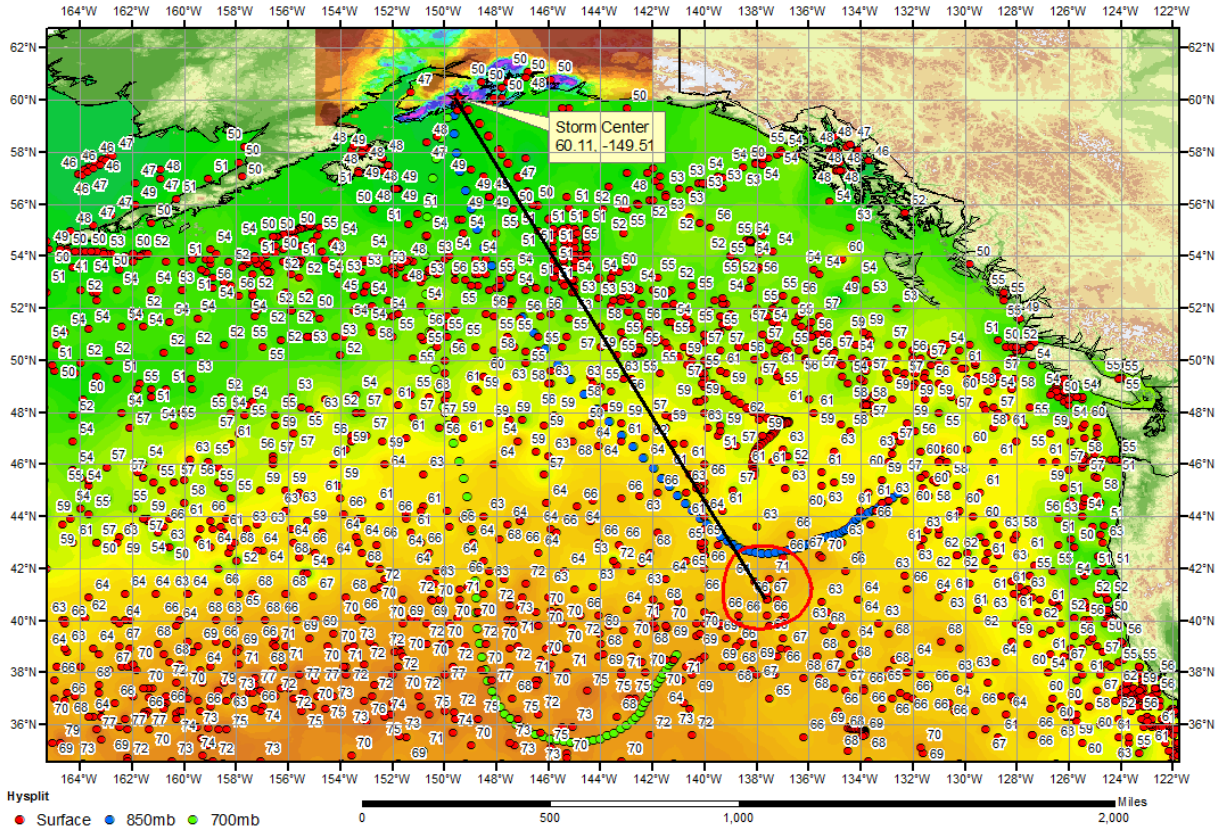
Notes: DAD values taken from SPAS 1267 Zone 2. Used SST values on October 8-9 along with HYSPLIT backward trajectory. Values were selected in region where temperature did not vary more than a degree over a large area.

Observed Storm Depth-Area-Duration									
	1 Hours	6 Hours	12 Hours	18 Hours	24 Hours	36 Hours	48 Hours	72 Hours	96 Hours
1 sq miles	0.5	2.6	4.9	6.6	7.5	9.1	10.2	10.7	10.7
10 sq miles	0.5	2.5	4.8	6.4	7.4	9.1	10.2	10.7	10.7
100 sq miles	0.4	2.3	4.2	5.8	7.0	9.1	10.2	10.7	10.7
200 sq miles	0.4	2.1	4.1	5.6	6.9	8.9	10.0	10.5	10.5
500 sq miles	0.4	2.1	4.0	5.4	6.6	8.5	9.8	9.8	10.2
1000 sq miles	0.4	2.0	3.8	5.2	6.4	8.4	9.5	9.8	9.9
2000 sq miles	0.3	1.9	3.5	4.9	6.1	8.0	9.1	9.5	9.5
5000 sq miles	0.3	1.7	3.3	4.5	5.6	7.3	8.2	8.4	8.7
10000 sq miles	0.3	1.6	2.9	4.1	5.1	6.6	7.3	7.4	7.8
20000 sq miles	0.2	1.3	2.4	3.3	4.2	5.5	6.1	6.2	6.5

Adjusted Storm Depth-Area-Duration									
	1 Hours	6 Hours	12 Hours	18 Hours	24 Hours	36 Hours	48 Hours	72 Hours	96 Hours
1 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
10 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
100 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
200 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
500 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
1000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
2000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
5000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
10000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
20000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!

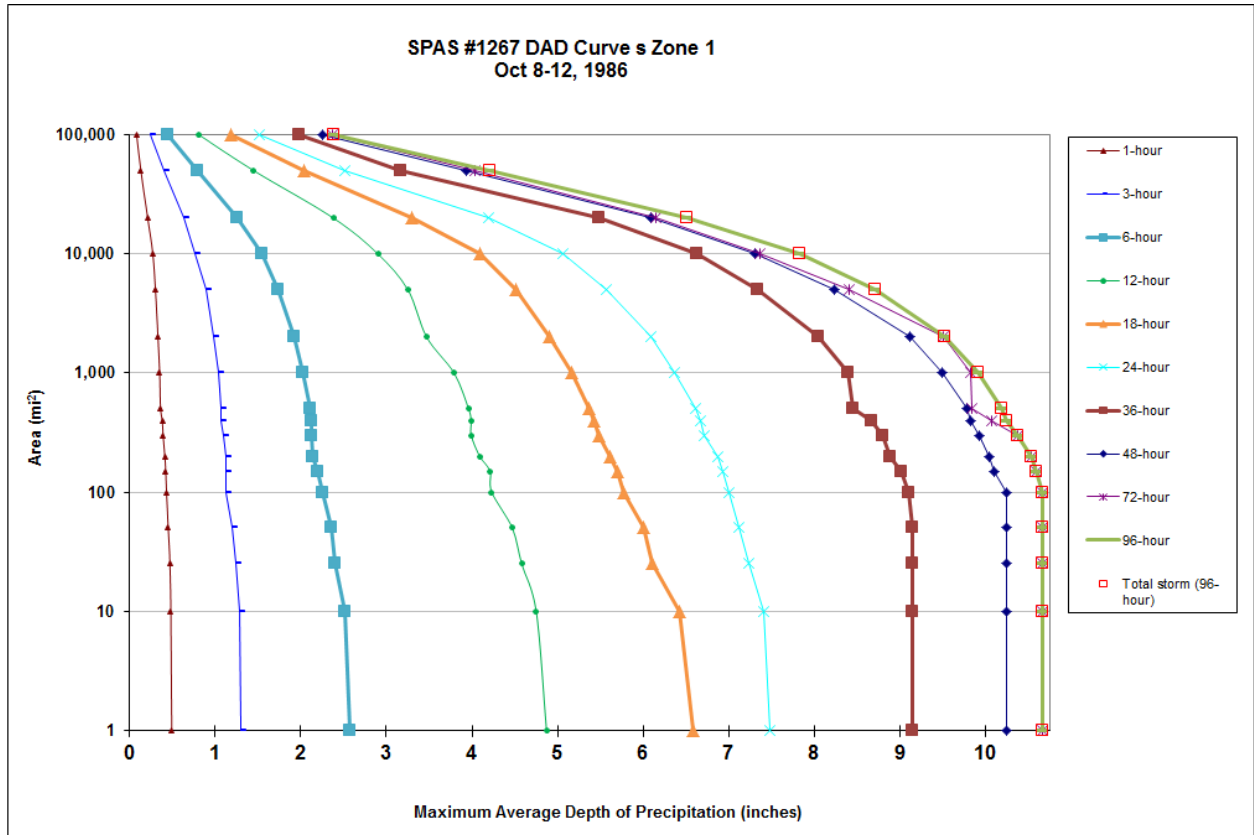
Storm or Storm Center Name	Seward, AK SPAS 1267-DAD Zone 1	
Storm Date(s)	10/8-12/1986	
Storm Type	Atmospheric River	
Storm Location	62.93 N	151.14 W
Storm Center Elevation	5,850	
Precipitation Total & Duration	11.01 Inches 96-hours	
Storm Representative SST	66.0 F	24hr
Storm Representative SST Location	40.80 N	137.70 W
Maximum SST	68.5 F	Sep 69.0 Oct 67.0
Moisture Inflow Vector	SSE @ 1620	Miles
In-place Maximization Factor	1.15	
Temporal Transposition (Date)	25-Sep	
Transposition Dewpoint Location	NA	NA
Transposition Maximum SST	NA	
Transposition Adjustment Factor	#VALUE!	
Average Basin Elevation	3,650	
Highest Elevation in Basin	13,131	
Inflow Barrier Height	1,483	
Elevation Adjustment Factor	#VALUE!	
Total Adjustment Factor	#VALUE!	

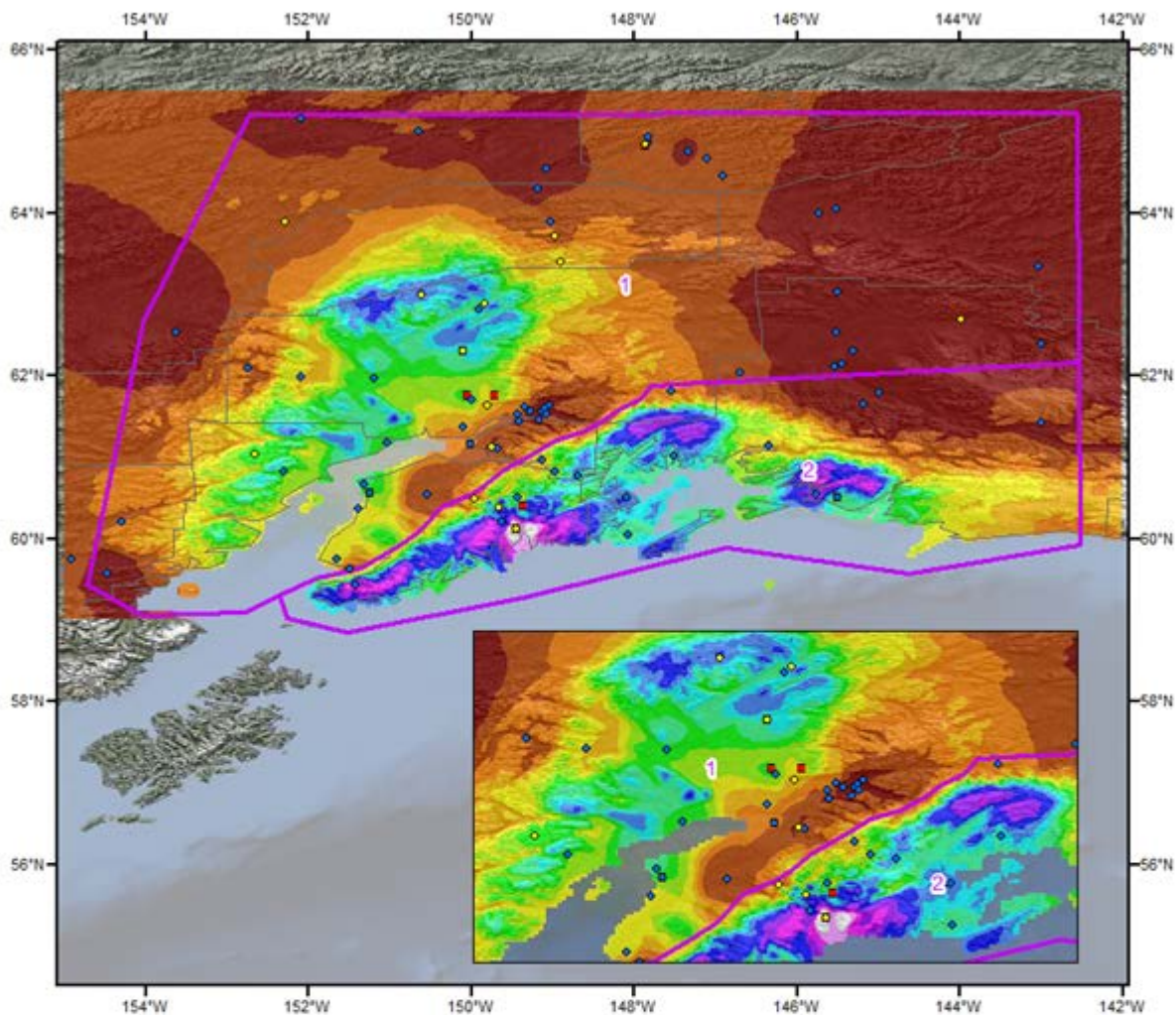
SPAS 1267 Alaska Storm Analysis
 October 7-11, 1986



Storm 1267 - Oct. 8 (1000 UTC) - Oct. 12 (0900 UTC), 1986
MAXIMUM AVERAGE DEPTH OF PRECIPITATION (INCHES)

Area (mi ²)	Duration (hours)										
	1	3	6	12	18	24	36	48	72	96	Total
0.2	0.5	1.33	2.63	5	6.74	7.72	9.47	10.59	11.01	11.01	11.01
1	0.49	1.3	2.58	4.87	6.59	7.48	9.14	10.24	10.66	10.66	10.66
10	0.48	1.28	2.51	4.75	6.43	7.41	9.14	10.24	10.66	10.66	10.66
25	0.47	1.24	2.4	4.58	6.1	7.23	9.14	10.24	10.66	10.66	10.66
50	0.45	1.2	2.35	4.47	6.01	7.12	9.14	10.24	10.66	10.66	10.66
100	0.43	1.13	2.26	4.23	5.78	7	9.11	10.24	10.66	10.66	10.66
150	0.42	1.12	2.2	4.21	5.7	6.93	9.01	10.1	10.6	10.6	10.60
200	0.41	1.12	2.14	4.09	5.61	6.87	8.89	10.04	10.53	10.53	10.53
300	0.39	1.09	2.13	3.99	5.48	6.72	8.8	9.93	10.38	10.38	10.38
400	0.38	1.07	2.12	3.99	5.42	6.67	8.67	9.83	10.07	10.25	10.25
500	0.36	1.06	2.11	3.96	5.37	6.61	8.45	9.78	9.84	10.19	10.19
1,000	0.35	1.04	2.02	3.79	5.16	6.36	8.39	9.5	9.83	9.92	9.92
2,000	0.33	0.98	1.92	3.47	4.91	6.09	8.04	9.12	9.51	9.52	9.52
5,000	0.3	0.9	1.73	3.25	4.51	5.57	7.34	8.23	8.41	8.71	8.71
10,000	0.27	0.76	1.55	2.9	4.09	5.06	6.62	7.31	7.37	7.83	7.83
20,000	0.21	0.64	1.26	2.38	3.29	4.19	5.49	6.09	6.15	6.51	6.51
50,000	0.13	0.4	0.79	1.45	2.04	2.52	3.16	3.93	4.03	4.21	4.21
100,000	0.08	0.24	0.45	0.81	1.18	1.51	1.98	2.25	2.37	2.39	2.39
100,631	0.08	0.24	0.45	0.81	1.18	1.5	1.97	2.24	2.37	2.38	2.38





**Total Storm (96-hr) Precipitation (inches)
October 8-11, 1986
SPAS 1267**

Gauges

- ◆ Daily
- Hourly
- Hourly Pseudo
- ◇ Supplemental



Precipitation (inches)

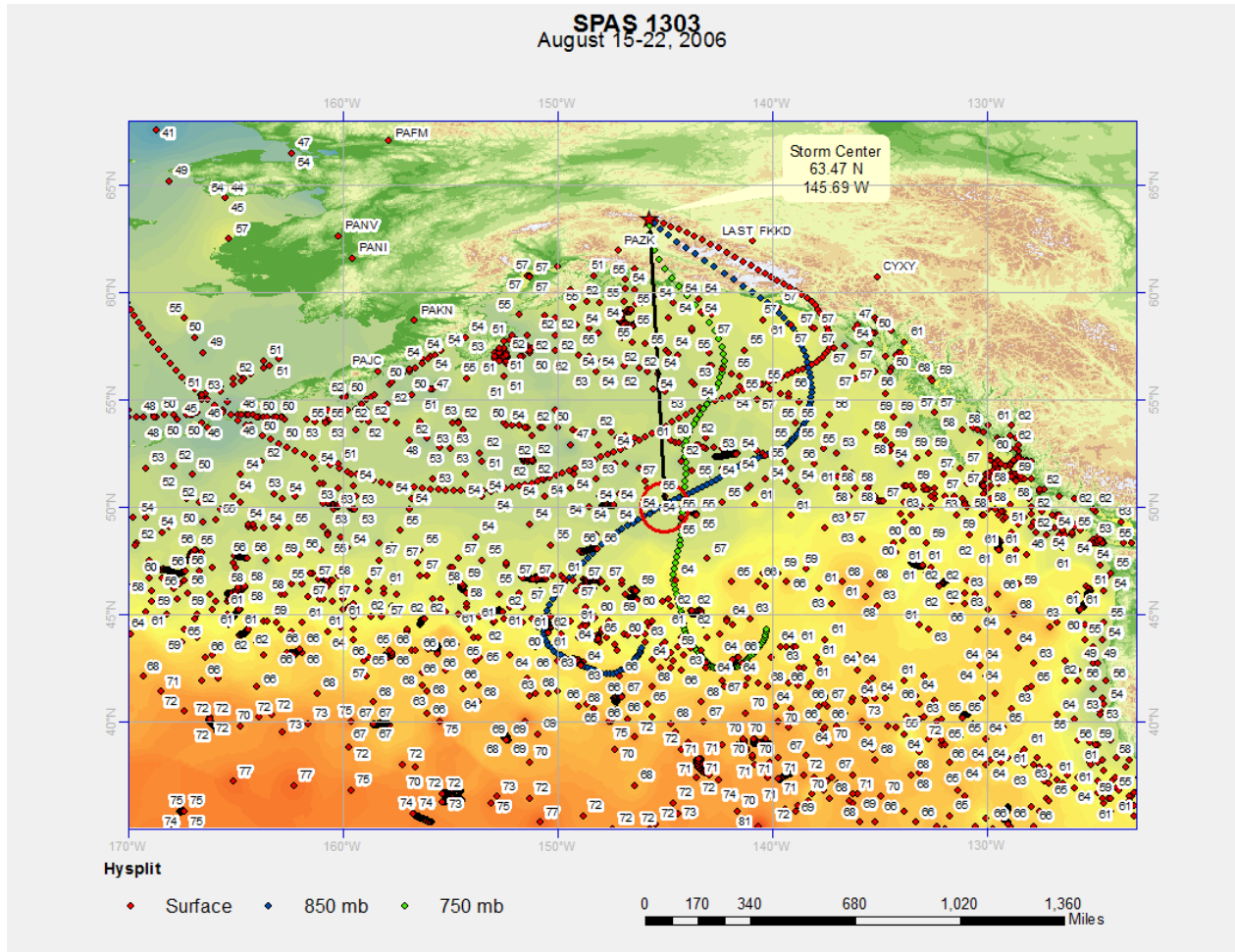
0.00 - 1.00	3.01 - 4.00	6.01 - 7.00	9.01 - 10.00	14.01 - 16.00
1.01 - 2.00	4.01 - 5.00	7.01 - 8.00	10.01 - 12.00	16.01 - 18.00
2.01 - 3.00	5.01 - 6.00	8.01 - 9.00	12.01 - 14.00	18.01 - 20.00



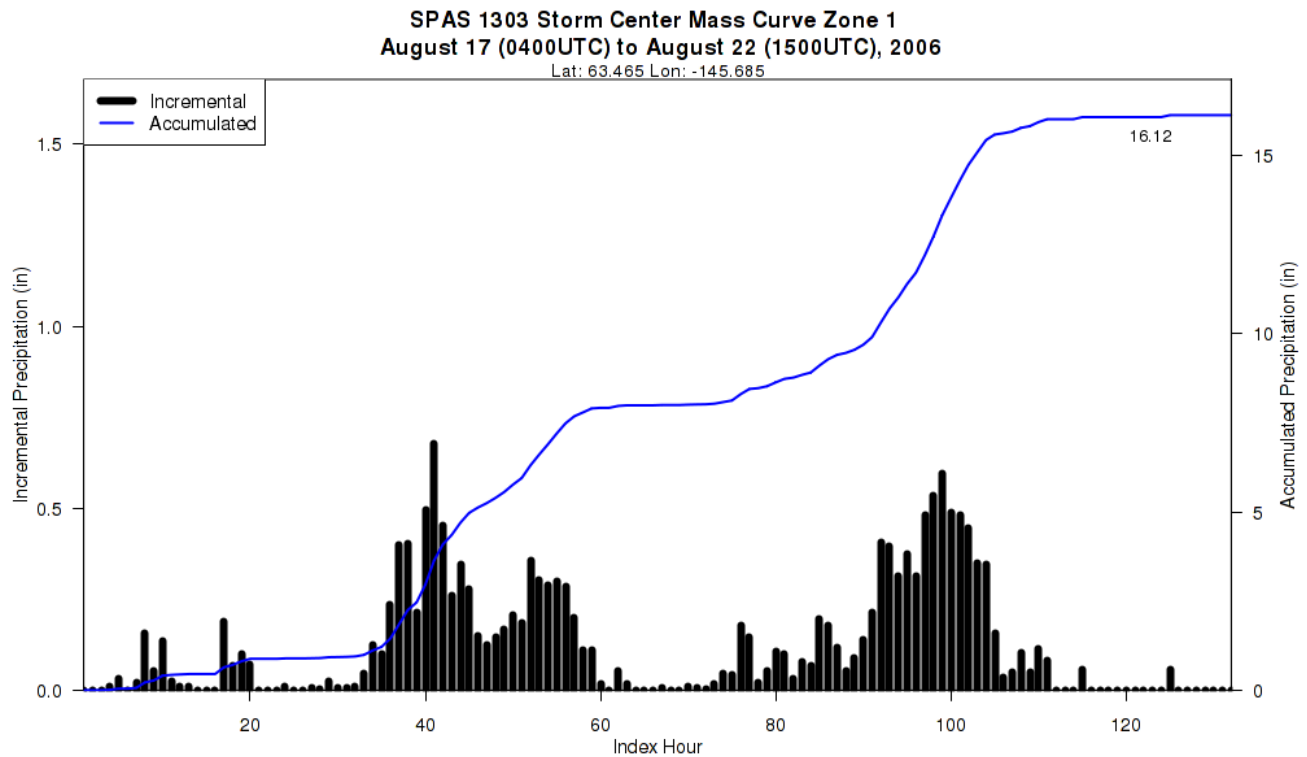
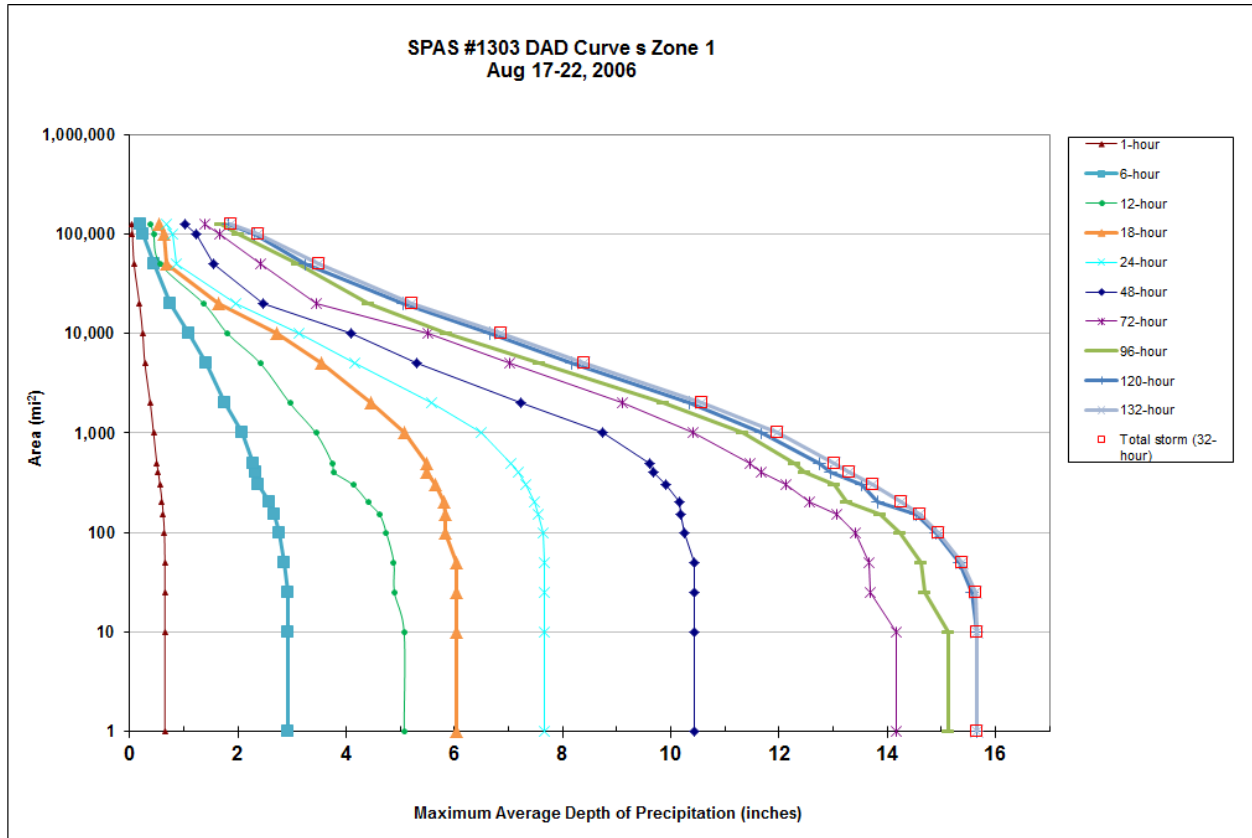
2/26/2013

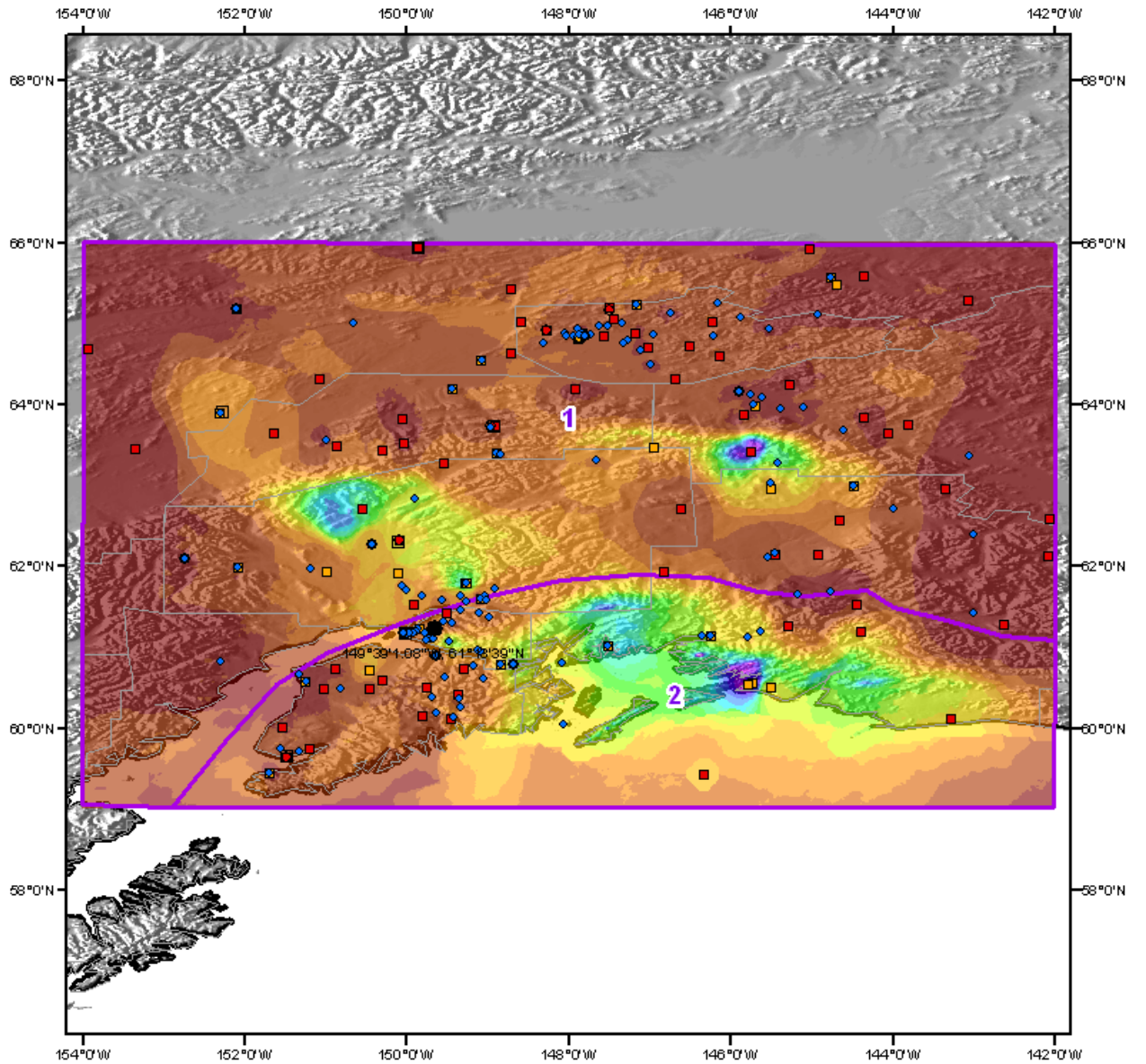
Black Rapids, AK, SPAS 1303 Zone 1
August 17, 2006

Storm Name:		SPAS 1303 Zone 1		Storm Adjustment for Susitna-Watana						
Storm Date:		8/17-22/2006								
AWA Analysis Date:		3/4/2014								
Temporal Transposition Date		15-Aug		Moisture Inflow Direction:		S @ 930 miles				
		Lat	Long	Basin Elevation		3,650 feet				
Storm center location		63.47 N	145.69 W	Storm Elevation		5,400 feet				
Storm Rep SST location		50.00 N	145.00 W	Storm Duration		132 hours				
Transposition SST location		NA	NA	Effective Barrier Height		1,483 feet				
Basin location		NA	NA							
The storm representative SST is		55.0 F	with total precipitable water above sea level of				1.07 inches.			
The in-place maximum SST is		59.0 F	with total precipitable water above sea level of				1.31 inches.			
The transpositioned maximum SST is		NA	with total precipitable water above sea level of				4.44 inches.			
The in-place storm elevation is		5,400	which subtracts	0.56	inches of precipitable water at		55.0 F			
The in-place storm elevation is		5,400	which subtracts	0.67	inches of precipitable water at		59.0 F			
The transposition storm elevation at		3,650	which subtracts	xx	inches of precipitable water at		NA			
The moisture inflow barrier height is		3,650	which subtracts	xx	inches of precipitable water at		NA			
The in-place maximization factor is		1.25								
The transposition/elevation factor is		1.00								
The barrier adjustment factor is		#VALUE!								
The total adjustment factor is		#VALUE!								
Observed Storm Depth-Area-Duration										
	1 Hour	6 Hours	12 Hours	18 Hours	24 Hours	48 Hours	72 Hours	96 Hours	120 Hours	132 Hours
1 sq miles	0.7	2.9	5.1	6.0	7.7	10.4	14.2	15.1	15.7	15.7
10 sq miles	0.7	2.9	5.1	6.0	7.7	10.4	14.2	15.1	15.7	15.7
100 sq miles	0.6	2.8	4.7	5.8	7.6	10.2	13.4	14.2	14.9	15.0
200 sq miles	0.6	2.6	4.4	5.8	7.5	10.2	12.6	13.2	13.8	14.3
500 sq miles	0.5	2.3	3.7	5.5	7.1	9.6	11.5	12.3	12.7	13.0
1000 sq miles	0.4	2.1	3.4	5.1	6.5	8.7	10.4	11.3	11.7	12.0
2000 sq miles	0.4	1.8	3.0	4.5	5.6	7.2	9.1	9.9	10.4	10.6
5000 sq miles	0.3	1.4	2.4	3.6	4.2	5.3	7.0	7.6	8.2	8.4
10000 sq miles	0.2	1.1	1.8	2.7	3.1	4.1	5.5	5.9	6.7	6.9
20000 sq miles	0.2	0.7	1.4	1.6	2.0	2.5	3.4	4.4	5.06	5.2
50000 sq miles	0.1	0.5	0.6	0.7	0.9	1.6	2.4	3.1	3.25	3.5
100000 sq miles	0.1	0.3	0.4	0.6	0.8	1.2	1.7	2.0	2.3	2.4
Adjusted Storm Depth-Area-Duration										
	1 Hour	6 Hours	12 Hours	18 Hours	24 Hours	48 Hours	72 Hours	96 Hours	120 Hours	132 Hours
1 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
10 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
100 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
200 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
500 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
1000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
2000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
5000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
10000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
20000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
50000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
100000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Storm or Storm Center Name		SPAS 1303 Zone 1								
Storm Date(s)		8/17-22/2006								
Storm Type		Synoptic								
Storm Location		63.47 N 145.69 W								
Storm Center Elevation		5400								
Precipitation Total & Duration (10 sq mi)		16.12 inches in 132 hours								
Storm Representative SST		55.0 F								
Storm Representative SST Location		50.00 N 145.00 W Aug								
In-place Maximum SST		59.0 F 59								
Moisture Inflow Vector		S @ 930								
In-place Maximization Factor		1.25								
Temporal Transposition (Date)		15-Aug								
Transposition SST Location		NA NA Jul								
Transposition Maximum SST		NA								
Transposition Adjustment Factor		1.00								
Average Basin Elevation		3,650								
Highest Elevation in Basin		13,131								
Inflow Barrier Height		1,483								
Elevation Adjustment Factor		#VALUE!								
Total Adjustment Factor		#VALUE!								



Storm 1303 - Aug. 17 (0400 UTC) - Aug. 22 (1500 UTC), 2006											
MAXIMUM AVERAGE DEPTH OF PRECIPITATION (INCHES)											
Area (mi ²)	Duration (hours)										Total
	1	6	12	18	24	48	72	96	120	132	
0.2	0.69	3.03	5.18	6.18	7.93	10.75	14.59	15.56	16.08	16.12	16.12
1	0.65	2.93	5.07	6.04	7.67	10.44	14.16	15.13	15.66	15.66	15.66
10	0.65	2.93	5.07	6.04	7.67	10.44	14.16	15.13	15.66	15.66	15.66
25	0.65	2.92	4.89	6.04	7.67	10.44	13.69	14.7	15.56	15.63	15.63
50	0.65	2.86	4.88	6.03	7.67	10.44	13.66	14.63	15.33	15.39	15.39
100	0.64	2.76	4.74	5.84	7.64	10.24	13.42	14.23	14.89	14.95	14.95
150	0.62	2.68	4.62	5.84	7.56	10.19	13.07	13.87	14.54	14.59	14.59
200	0.6	2.59	4.41	5.8	7.48	10.15	12.57	13.24	13.82	14.25	14.25
300	0.56	2.38	4.13	5.66	7.33	9.9	12.12	13.02	13.52	13.73	13.73
400	0.53	2.33	3.78	5.5	7.19	9.67	11.67	12.47	12.95	13.29	13.29
500	0.5	2.28	3.74	5.48	7.05	9.6	11.46	12.29	12.74	13.02	13.02
1,000	0.44	2.07	3.44	5.08	6.5	8.74	10.42	11.32	11.68	11.96	11.96
2,000	0.38	1.75	2.96	4.45	5.57	7.24	9.1	9.87	10.35	10.57	10.57
5,000	0.28	1.41	2.42	3.55	4.17	5.31	7.03	7.58	8.17	8.4	8.40
10,000	0.24	1.1	1.81	2.71	3.12	4.09	5.51	5.86	6.66	6.86	6.86
20,000	0.18	0.74	1.37	1.64	1.97	2.47	3.44	4.42	5.06	5.22	5.22
50,000	0.08	0.45	0.57	0.67	0.87	1.55	2.42	3.1	3.25	3.49	3.49
100,000	0.05	0.25	0.44	0.64	0.79	1.22	1.67	2.01	2.3	2.37	2.37
126,338	0.04	0.2	0.39	0.55	0.67	1.03	1.38	1.68	1.83	1.88	1.88





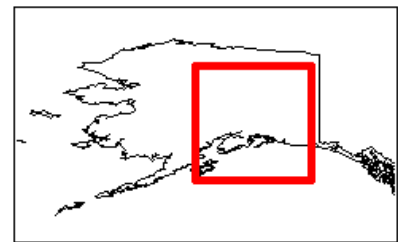
Total 132-hour Precipitation (inches)
August 17 0400 UTC - August 22 1500 UTC, 2006
SPAS #1303

Precipitation (inches)

0.00 - 1.00	7.01 - 8.00
1.01 - 2.00	8.01 - 9.00
2.01 - 3.00	9.01 - 10.00
3.01 - 4.00	10.01 - 11.00
4.01 - 5.00	11.01 - 12.00
5.01 - 6.00	12.01 - 13.00
6.01 - 7.00	13.01 - 14.00

Stations

14.01 - 15.00	◆ Daily
15.01 - 16.00	◇ Daily omitted
16.01 - 17.00	■ Hourly
17.01 - 18.00	□ Hourly omitted
18.01 - 19.00	■ Hourly pseudo
19.01 - 20.00	◆ Supplemental
	◇ Supplemental omitted



12/10/2013

Old Tyonek, AK, SPAS 1256 Zone 1
September 15, 2012

Storm Name: SPAS 1256 Old Tyonek, AK DAD	Storm Adjustment for Susitna-Watana
Storm Date: 9/15-22/2012	
AWA Analysis Date: 1/22/2013	

Temporal Transposition Date	15-Sep		Moisture Inflow Direction:	SSW @ 870	miles
Storm center location	Lat	Long	Basin Elevation	1,100	feet
	61.26 N	151.86 W	Storm Elevation	2,730	feet
Storm Rep SST location	49.00 N	157.00 W	Storm Duration	24	hours
Transposition SST location	NA	NA	Effective Barrier Height	1,200	feet
Basin location	42.76 N	74.12 W			

The storm representative SST is	54.0 F	with total precipitable water above sea level of	1.02	inches.
The in-place maximum SST is	57.0 F	with total precipitable water above sea level of	1.19	inches.
The transposition maximum SST is	NA	with total precipitable water above sea level of	4.44	inches.
The in-place storm elevation is	2,730	which subtracts 0.18	inches of precipitable water at	54.0 F
The in-place storm elevation is	2,730	which subtracts 0.20	inches of precipitable water at	57.0 F
The transposition storm elevation at	1,100	which subtracts xx	inches of precipitable water at	NA
The moisture inflow barrier height is	1,200	which subtracts xx	inches of precipitable water at	NA

The in-place maximization factor is	1.18
The transposition/ elevation factor is	#VALUE!
The barrier adjustment factor is	#VALUE!
The total adjustment factor is	#VALUE!

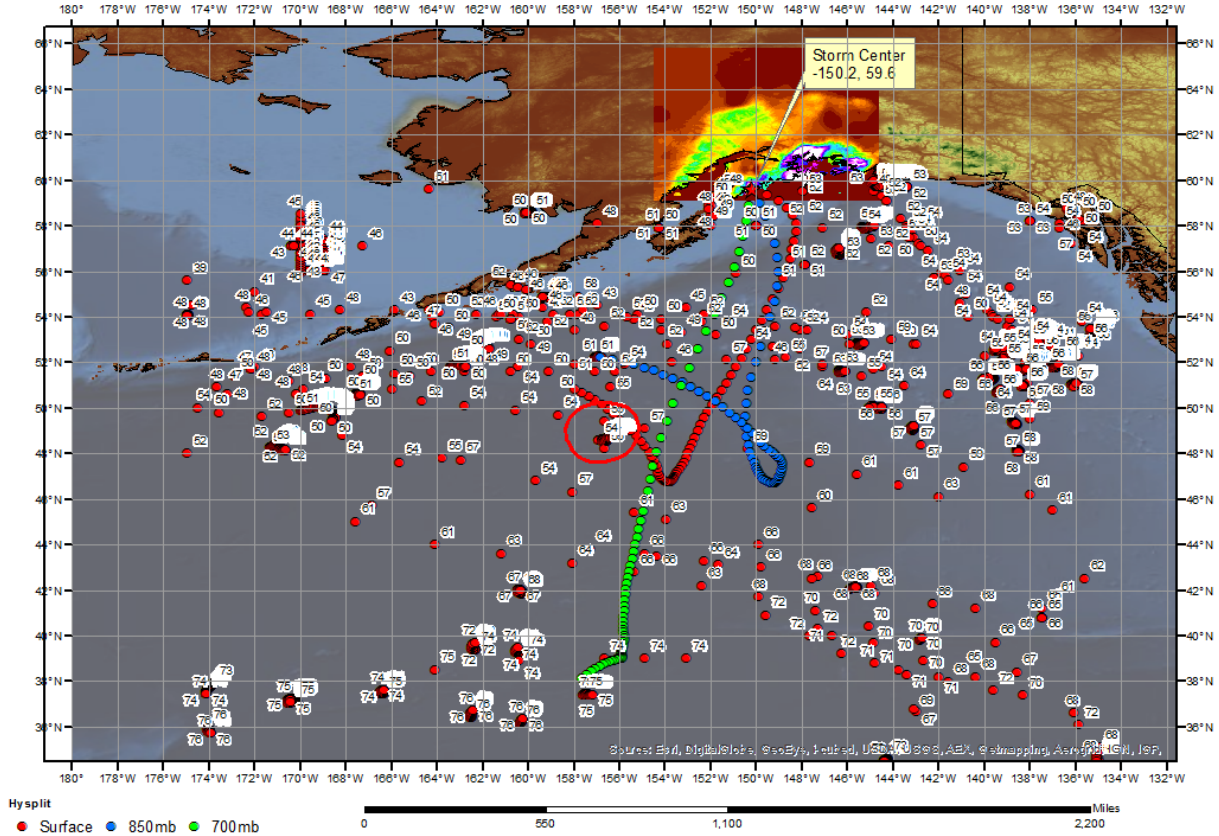
Notes: Storm representative SST value was based on SST values for September 13-14, 2012 along the surface HYSPLIT trajectory data. The HYSPLIT trajectory also represents the second period of precipitation fall. Values were selected in region where temperature did not vary more than a 1-degree over a large area and had temperature recordings throughout the period.

Observed Storm Depth-Area-Duration										
	1 Hour	6 Hours	12 Hours	24 Hours	36 Hours	48 Hours	72 Hours	96 Hours	120 Hours	168 Hours
10 sq miles	0.9	3.2	3.9	6.1	8.3	8.6	9.0	10.0	11.9	15.3
100 sq miles	0.9	2.6	3.6	5.1	7.3	7.4	7.9	9.7	11.5	15.3
200 sq miles	0.8	2.4	3.5	4.5	6.4	6.6	7.5	9.7	11.3	15.0
500 sq miles	0.8	2.3	3.4	4.0	5.2	6.0	7.3	9.4	10.8	14.3
1000 sq miles	0.8	2.1	3.1	3.8	4.8	5.9	7.1	9.1	10.4	13.6
2000 sq miles	0.7	1.8	2.7	3.6	4.6	5.5	6.8	8.6	10.0	12.9
5000 sq miles	0.6	1.6	2.5	3.3	4.0	5.0	6.3	7.7	9.1	11.8
10000 sq miles	0.5	1.4	2.3	3.0	3.7	4.5	5.9	6.8	8.2	10.7
20000 sq miles	0.3	1.1	1.9	2.6	3.2	3.9	5.1	5.8	7.1	9.2

Adjusted Storm Depth-Area-Duration										
	1 Hour	6 Hours	12 Hours	24 Hours	36 Hours	48 Hours	72 Hours	96 Hours	120 Hours	168 Hours
10 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
100 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
200 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
500 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
1000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
2000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
5000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
10000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
20000 sq miles	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!

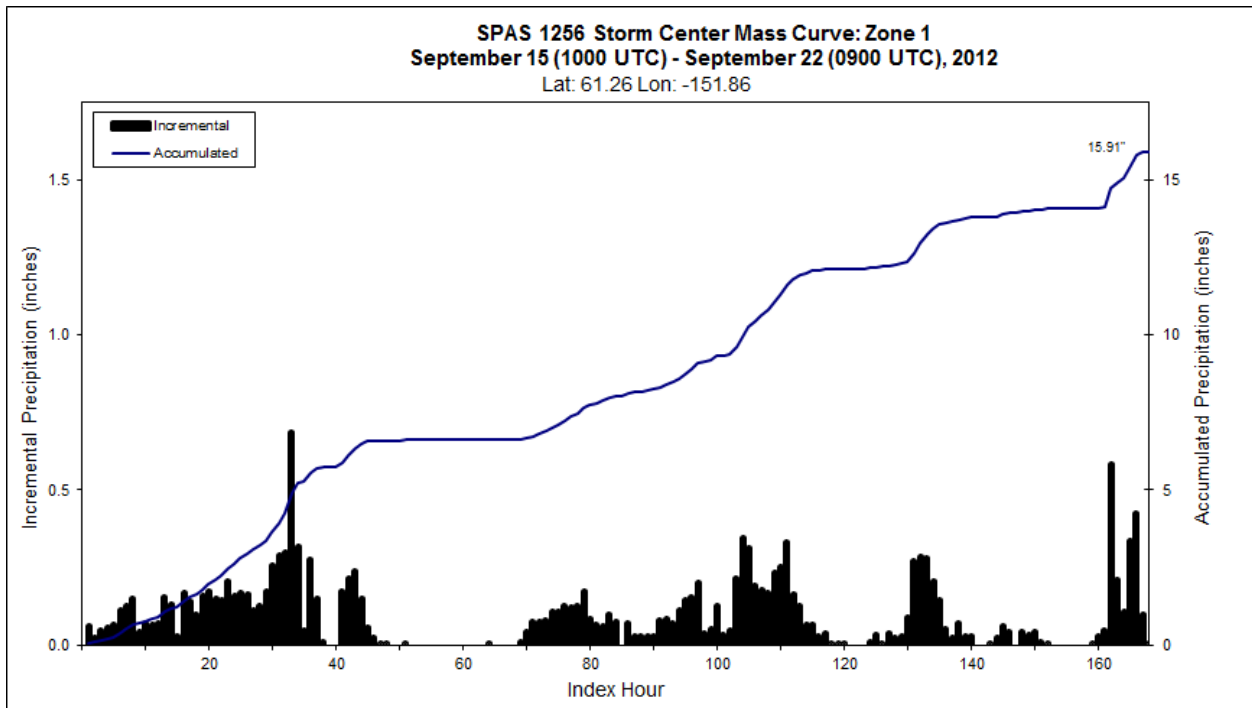
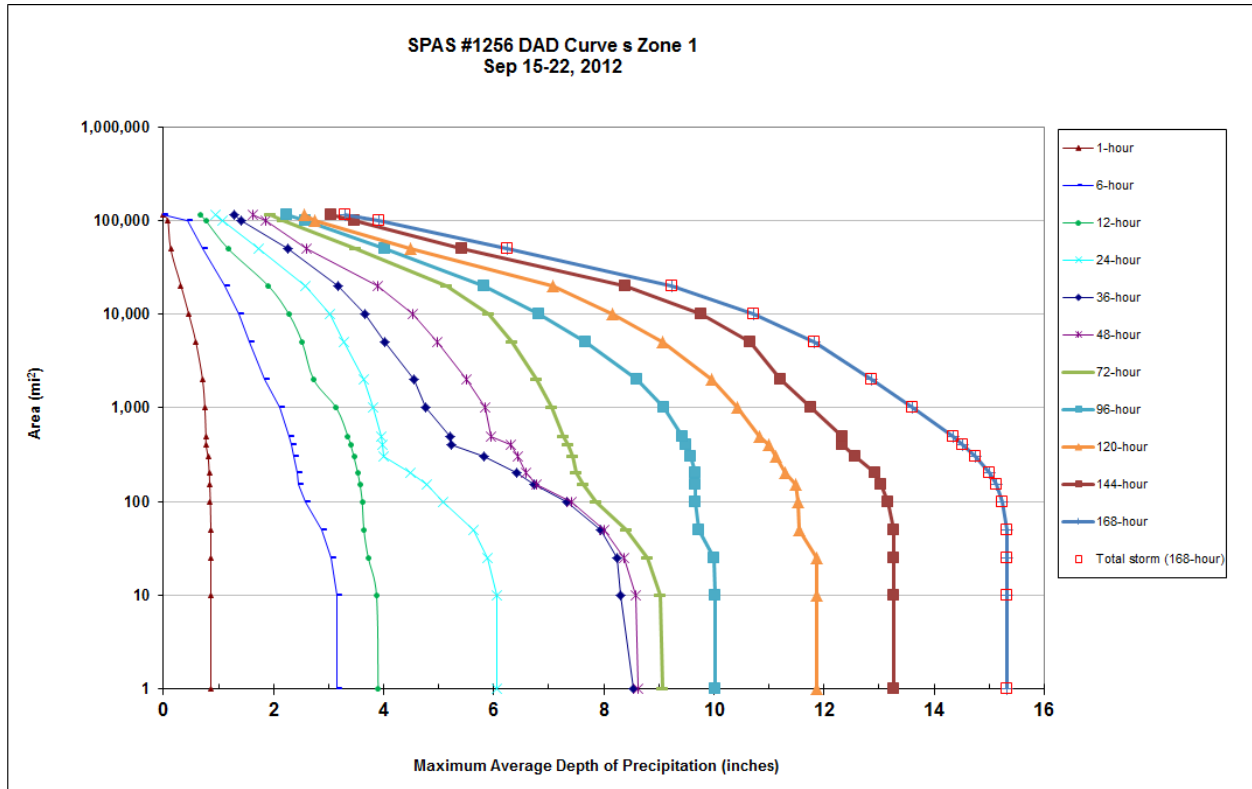
Storm or Storm Center Name	SPAS 1256 Old Tyonek, AK DAD Zone 1	
Storm Date(s)	9/15-22/2012	
Storm Type	Atmospheric River	
Storm Location	61.26 N	151.86 W
Storm Center Elevation	2,730	
Precipitation Total & Duration	15.91 inches in 168 hours	
Storm Representative SST	54.0 F	15-Aug 15-Sep
Storm Representative SST Location	49.00 N	157.00 W 56.5 57.0
In-place Maximum SST	57.0 F	
Moisture Inflow Vector	SSW @ 870	
In-place Maximization Factor	1.18	
Temporal Transposition (Date)	15-Sep	
Transposition SST Location	NA	NA
Transposition Maximum SST	NA	
Transposition Adjustment Factor	#VALUE!	
Average Basin Elevation	1,100	
Highest Elevation in Basin	5,333	
Inflow Barrier Height	1,200	
Elevation Adjustment Factor	#VALUE!	
Total Adjustment Factor	#VALUE!	

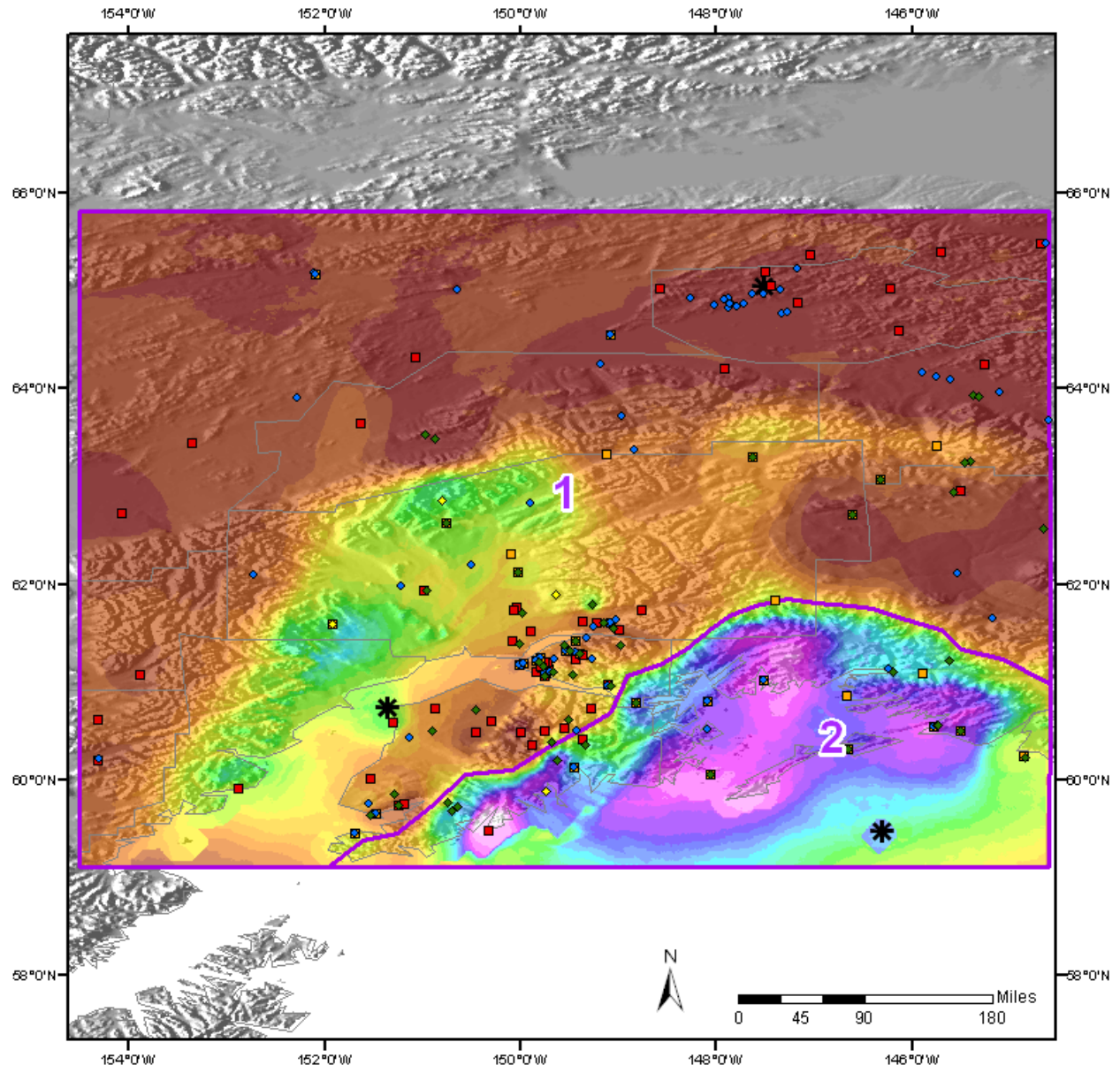
SPAS 1256 Denai, AK Storm Analysis
September 15-21, 2012



Storm 1256 - Sep. 15 (1000 UTC) - Sep. 22 (0900 UTC), 2013
MAXIMUM AVERAGE DEPTH OF PRECIPITATION (INCHES)

Area (mi ²)	Duration (hours)											
	1	6	12	24	36	48	72	96	120	144	168	Total
0.2	0.88	3.26	3.98	6.23	8.76	8.86	9.3	10.52	12.34	13.83	15.91	15.91
1	0.86	3.16	3.9	6.06	8.53	8.63	9.06	10.03	11.87	13.27	15.32	15.32
10	0.86	3.16	3.87	6.06	8.31	8.59	9.03	10.03	11.87	13.27	15.32	15.32
25	0.86	3.04	3.72	5.88	8.25	8.36	8.79	10.01	11.86	13.27	15.32	15.32
50	0.86	2.88	3.64	5.63	7.94	8.01	8.42	9.73	11.55	13.27	15.32	15.32
100	0.85	2.58	3.61	5.09	7.34	7.41	7.86	9.66	11.52	13.16	15.25	15.25
150	0.84	2.45	3.57	4.79	6.74	6.78	7.63	9.66	11.49	13.04	15.13	15.13
200	0.83	2.42	3.53	4.49	6.41	6.58	7.5	9.66	11.29	12.92	15	15.00
300	0.81	2.37	3.46	4	5.83	6.44	7.43	9.58	11.13	12.57	14.76	14.76
400	0.77	2.32	3.4	3.98	5.23	6.31	7.36	9.5	10.99	12.33	14.52	14.52
500	0.77	2.29	3.35	3.96	5.21	5.95	7.27	9.43	10.83	12.33	14.34	14.34
1,000	0.75	2.12	3.14	3.8	4.76	5.85	7.05	9.08	10.43	11.77	13.61	13.61
2,000	0.71	1.83	2.73	3.64	4.55	5.5	6.78	8.61	9.95	11.22	12.86	12.86
5,000	0.59	1.57	2.52	3.28	4.03	4.98	6.34	7.66	9.07	10.66	11.83	11.83
10,000	0.46	1.38	2.28	3.03	3.66	4.52	5.91	6.82	8.16	9.77	10.72	10.72
20,000	0.32	1.12	1.91	2.58	3.18	3.9	5.14	5.82	7.07	8.38	9.24	9.24
50,000	0.13	0.72	1.18	1.73	2.27	2.6	3.49	4.02	4.49	5.42	6.24	6.24
100,000	0.08	0.43	0.77	1.08	1.42	1.86	2.17	2.58	2.74	3.47	3.92	3.92
116,206	0	0	0.67	0.94	1.29	1.63	1.94	2.24	2.55	3.04	3.29	3.29

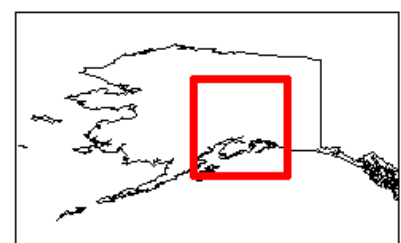




Total 168-hour Storm Precipitation (inches)
Sept. 15, 2012 1000 Z - Sept. 22, 2012 0900 Z
SPAS #1256

Precipitation (inches)			
0.00 - 1.00	7.01 - 8.00	14.01 - 15.00	22.01 - 24.00
1.01 - 2.00	8.01 - 9.00	15.01 - 16.00	24.01 - 26.00
2.01 - 3.00	9.01 - 10.00	16.01 - 17.00	26.01 - 28.00
3.01 - 4.00	10.01 - 11.00	17.01 - 18.00	28.01 - 30.00
4.01 - 5.00	11.01 - 12.00	18.01 - 19.00	30.01 - 32.00
5.01 - 6.00	12.01 - 13.00	19.01 - 20.00	32.01 - 34.00
6.01 - 7.00	13.01 - 14.00	20.01 - 22.00	

◆ Daily
■ Hourly
■ Hourly Pseudo
◆ Supplemental
◆ Supplemental Est.
□ DAD Zones
* Radar location



MEIS TAT, Inc. 01/22/2013