



# Federal Airways & Airspace®

## Airspace Executive Summary

Site ID: Courtenay Wind Farm

By: Federal Airways & Airspace®

Date: August 22, 2013

EXHIBIT

B

**Subject:** Analysis of North Dakota Aeronautics Commission letter noting concerns regarding Wind Turbines 1, 2, 3, 10, 11, 12, 13, 21, 22 & Met Tower B at the Courtenay Wind Farm.

**Discussion:** On July 23, 2013 the North Dakota Aeronautics Commission issued a letter regarding 9 wind turbines and 1 Met Tower contained within the Proposed Courtenay Wind Farm Project in Courtenay, North Dakota. The letter detailed alleged penetrations to Obstruction Standards at the Sprague Airport (8ND7). These alleged penetrations include FAR 77.19 (b) Conical Surface and the 77.17 (a)(2) Airport Surface. The following report will detail each of the above mentioned 8ND7 Obstruction Standards and the locations of the subject sites.

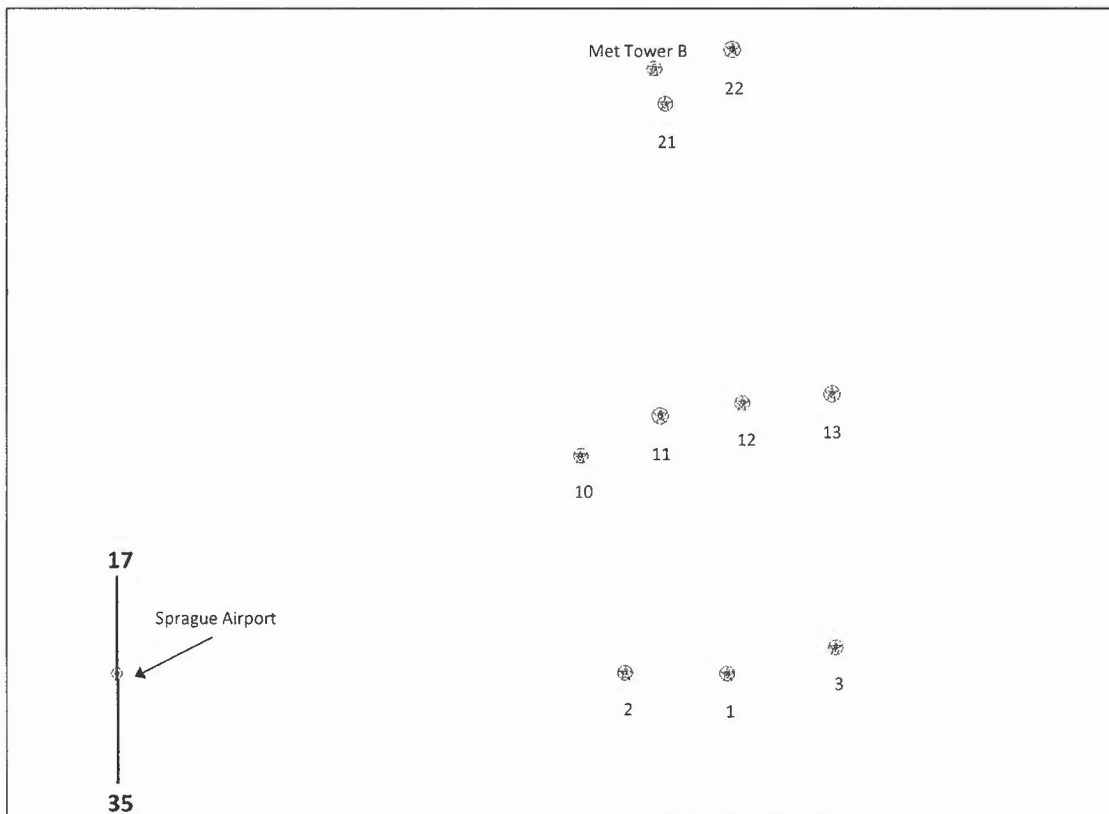


Figure 1: Wind Turbines 1, 2, 3, 10, 11, 12, 13, 21, 22 & Met Tower B located near Sprague Airport (8ND7).

The nearest wind turbine is located approximately 1.1 nautical miles from the Sprague Airport. The farthest structure is located approximately 1.9 nautical miles from the Sprague Airport reference point.

## Sprague Airport: 8ND7

**SPRAGUE**

**8ND7**  
COURTENAY, ND  
UNITED STATES  
Data is effective: 06/27/2013 - 08/22/2013

[Home](#) [Airport Search](#) [Show All Sections](#) [Airport Operations](#) [Airport Contacts](#) [General Remarks](#) [Communications](#) [Navigation Aids](#) [Weather Data Services](#) [Runways](#) [Heliparks](#)

Latitude: 47-7-14.39 N  
Longitude: 98-39-28.2 W  
Elevation: 1355 ft.  
From city: 8 miles SW of COURTENAY ND  
ARTCC: ZNP  
Section chart: TWIRL CITIES  
Time Zone: UTC-6(-SDT)

**Airport Operations**

Airport Status: Operational Fuel: NONE  
Facility use: Private use only Int'l Operations:  
Control Tower: No air traffic control tower at airport  
FSS: GRAND FORKS FSS (GFK)  
Toll Free: 1-800-WX-BRIEF  
Attendance: UNATNDD

**Airport Contacts**

OWNER:  
ROBERT SPRAGUE  
8720 20TH ST SE  
COURTENAY, ND 58426  
UNITED STATES  
Phone: 701-435-0018

MANAGER:  
ROBERT SPRAGUE  
8720 20TH ST SE  
COURTENAY, ND 58426  
UNITED STATES  
Phone: 701-435-0018

**General Remarks**

No remarks.

**Airport Communications**

UNICOM: None  
ATIS: None

Figure 2: AOPA classifies Sprague Airport as private owned, private use.

According to the Federal Aviation Administration's (FAA) current data and the FAA'S National Flight Data Center (NFDC) website:

(<https://nfdc.faa.gov/nfdcApps/airportLookup/airportDisplay.jsp?category=nasr&airportId=8ND7>), the Sprague Airport (8ND7) is a privately owned, private use landing facility. The public does not have permission to utilize this landing facility. The FAA does not protect private landing facilities when conducting Obstacle Evaluation Analyses, unless the airport has a Special Procedure associated with it. No Special Procedures have been implemented for 8ND7.

## FAR Part 77.5 Applicability

**Subpart B—Notice Requirements**

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**§ 77.5 Applicability.**

(a) If you propose any construction or alteration described in § 77.9, you must provide adequate notice to the FAA of that construction or alteration.

(b) If requested by the FAA, you must also file supplemental notice before the start date and upon completion of certain construction or alterations that are described in § 77.9.

(c) Notice received by the FAA under this subpart is used to:

- (1) Evaluate the effect of the proposed construction or alteration on safety in air commerce and the efficient use and preservation of the navigable airspace and of airport traffic capacity at public use airports;
- (2) Determine whether the effect of proposed construction or alteration is a hazard to air navigation;
- (3) Determine appropriate marking and lighting recommendations, using FAA Advisory Circular 70/7460-1, Obstruction Marking and Lighting;
- (4) Determine other appropriate measures to be applied for continued safety of air navigation, and
- (5) Notify the aviation community of the construction or alteration of objects that affect the navigable airspace, including the revision of charts, when necessary.

Figure 3: FAR Part 77.5 Applicability

FAR Part 77.5 (c)(2) states that the Federal Aviation Administration will “Evaluate the effect of the proposed construction or alteration on safety in air commerce and the efficient use and preservation of the navigable airspace and of airport traffic capacity at public use airports”.

The Sprague Airport is a private use landing facility and is not protected by the FAA. Therefore, the alleged Part 77 penetrations, detailed within the North Dakota Aeronautics’ Commission letter are inapplicable.

## 8ND7: Runway 17/35

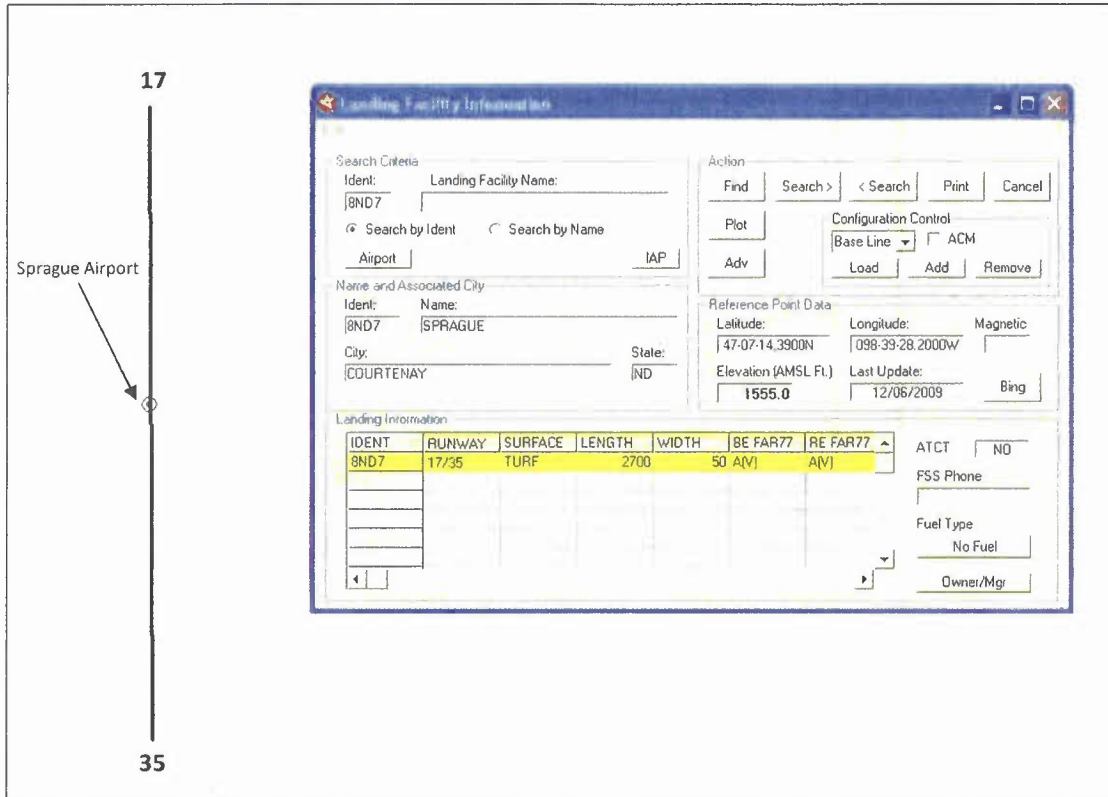
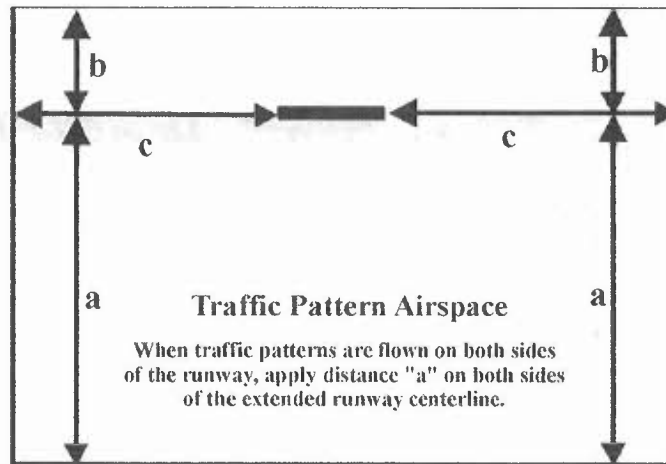


Figure 4: 8ND7 Runway 17/35

The North Dakota Aeronautics Commission detailed an alleged penetration to the Sprague Airport's VFR Transitional Surface 77.17 (a)(2). The 77.17 (a)(2) surface is defined as "A height that is 200 feet AGL, or above the established airport elevation, whichever is higher, within 3 nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile from the airport up to a maximum of 499 feet."

Runway 17/35 is the only runway associated with the Sprague Airport. According to the FAA's NFDC office, the official length of this runway is 2700 feet long. Therefore, even if Part 77 Surfaces did apply to the Sprague Airport, the 77.17 (a)(2) VFR Transitional Surface is not applicable, as the runway is less than 3200 feet in length.

FIG 4-3-11  
 TRAFFIC PATTERN AIRSPACE



Aircraft Category	Distance (nautical miles)			
	a	b	c	d*
A	1.25	.25	1.25	.375
B	1.5	.25	1.5	.5
C	2.25	.5	2.25	.875
D	4.0	.5	3.0	1.0

Figure 5 Traffic Pattern Dimensions

Both public and private airports have VFR Airspace Traffic Patterns. In the case of 8ND7, the current traffic pattern for Runway 17 and 35 is a left hand traffic pattern. Many airports have both left and right hand traffic patterns. The proposed wind farm will be east of this airport. It is a common practice to alter an airport's runway traffic pattern to avoid objects. If the 8ND7 Runway 17 traffic pattern were made a right hand traffic pattern then all traffic will be west of the airport and on the opposite side of the airport from the proposed wind farm.

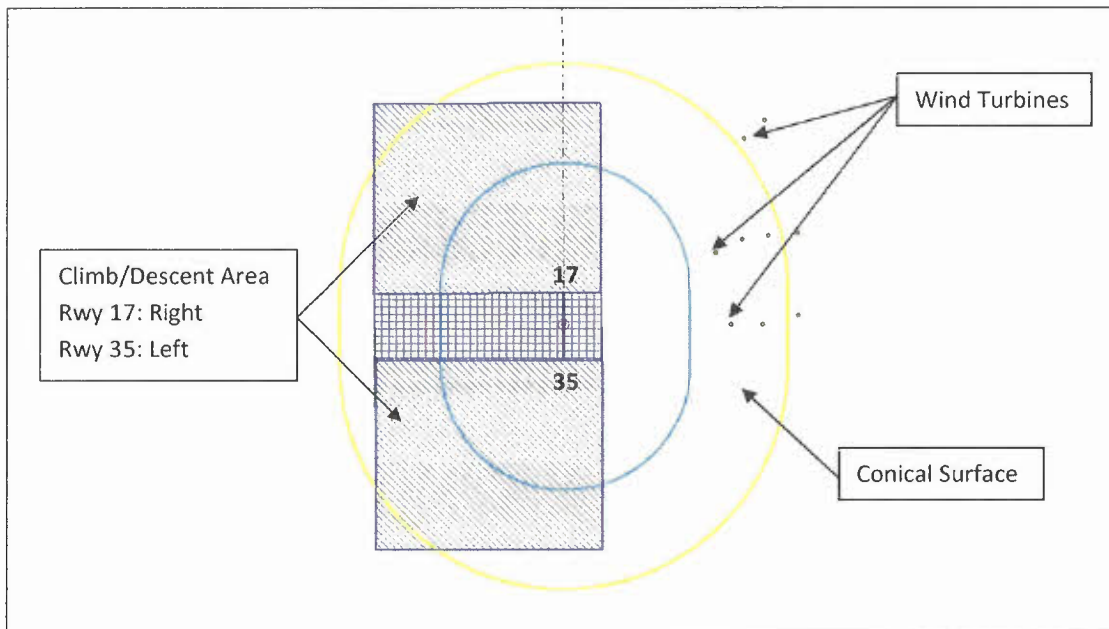


Figure 6: 8ND7 Proposed Traffic Pattern change.

The above image represents the traffic pattern for private airport 8ND7 with a right hand traffic pattern for Runway 17 and a left hand pattern for Runway 35. By using a right hand climb and descent for Runway 17 and a left hand climb and descent for Runway 35 there are no conflicts between the proposed wind turbines and 8ND7. If the conical surface did exist there would be no violation of it.

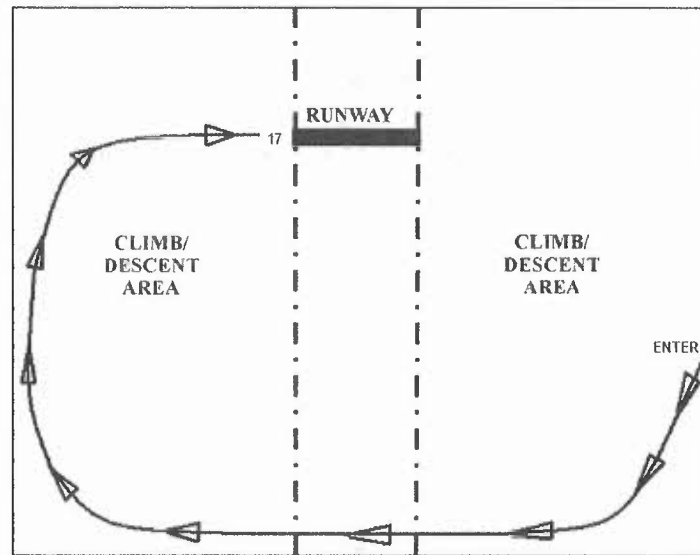


Figure 7 Right Hand Traffic Pattern Runway 17

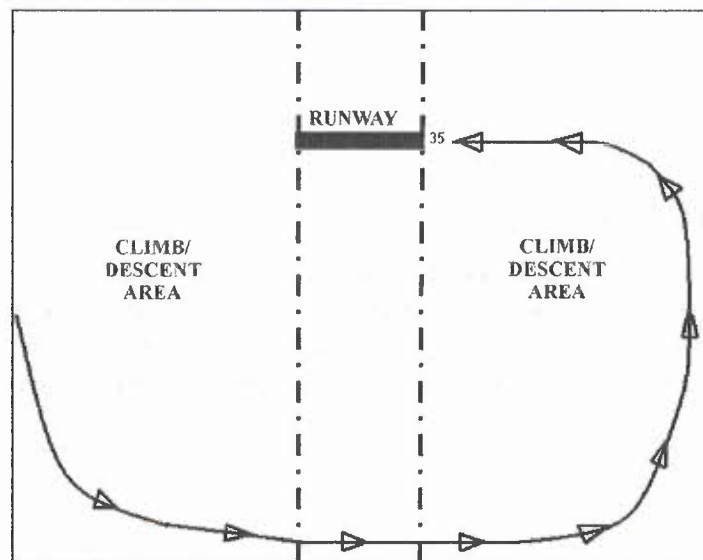


Figure 8 Left Hand Traffic Pattern Runway 35

To illustrate the use of a left and right hand traffic pattern an example of this traffic pattern is presented.

Laughlin/Bullhead International Airport (IFP) has a Runway 16/34 with a right hand pattern on Runway 16 and a left hand pattern on Runway 34. It would look very similar to Figure 5. The East side of the airport has high hills that extend 1171' AMSL or 470' above the airport. The hills run perpendicular to the runway and are a significant penetration to the conical surface which prevents aircraft operations on the east side of the airport. In addition, the climb/descent area for the north runway at IFP has significant penetrations (800' above the runway elevation). This airport has over 23,000 aircraft operation per year versus the 400 at 8ND7 with no problems.

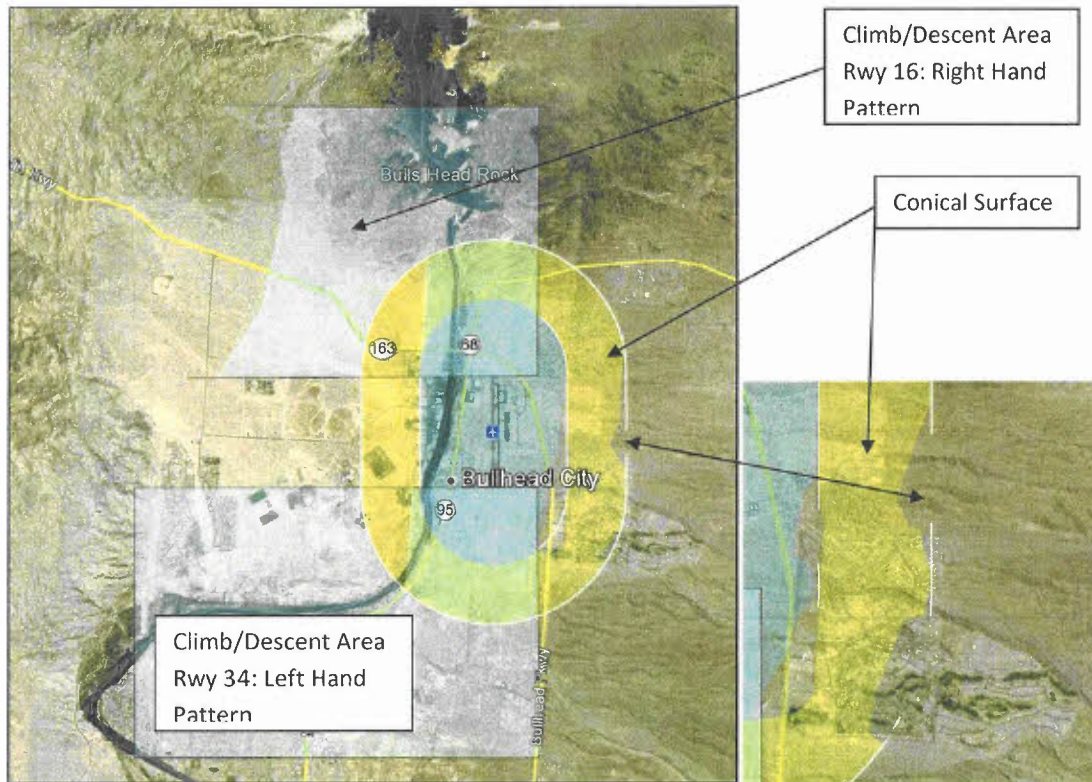


Figure 9: IFP VFR Traffic Pattern Airspace Surfaces image at right shows the details of the penetration

As can be seen in the above example there is significant penetration to the conical and horizontal surface. The Horizontal and Conical surface shown above is 5,000' and 4,000' in width just as was constructed for 8ND8. This is but one example of an airport with the same type of VFR traffic pattern suggested for 8ND7 as mitigation to the alleged penetration of the conical surface, which again does not apply to a private airport.

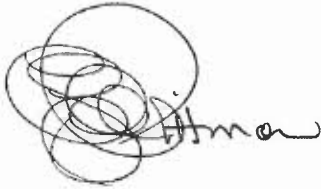
August 22, 2013

Special Aeronautical Study

**Conclusion:** An analysis was conducted and found that The Sprague Airport, located in Courtenay, North Dakota, is a privately owned, private use landing facility. Part 77 Surfaces, such as the 77.19 (b) Conical Surface and 77.17 (a)(2) VFR Transitional Surface Airport Surface do not apply to private use landing facilities.

The North Dakota Aeronautics Commission's regulations contain the same surfaces and standards as the FAA CFR FAR Part 77. It is our belief that according to Title 14, CFR Part 77 the project complies with State and Federal aeronautics regulation and is not considered a hazard to aviation.

Approved,

A handwritten signature in black ink, appearing to read "C. Pittman", with a circular scribble to its left.

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Clyde J Pittman, Aerospace Engineer  
Federal Airways & Airspace®





# AIRPORT MASTER RECORD

> 1 ASSOC CITY: BULLHEAD CITY 4 STATE: AZ LOC ID: IFP FAA SITE NR: 00640.5\*A  
> 2 AIRPORT NAME: LAUGHLIN/BULLHEAD INTL 5 COUNTY: MOHAVE AZ  
> 3 CBD TO AIRPORT (NM): 01 N 6 REGION/ADO: AWP/LAX 7 SECT AERO CHT: PHOENIX

<u>GENERAL</u>		<u>SERVICES</u>		<u>BASED AIRCRAFT</u>	
> 10 OWNERSHIP:	PU	> 70 FUEL:	100LL A	90 SINGLE ENG:	23
> 11 OWNER:	MOHAVE COUNTY	> 71 AIRFRAME RPRS:		91 MULTI ENG:	3
> 12 ADDRESS:	BOX 390 KINGMAN, AZ 86402	> 72 PWR PLANT RPRS:		92 JET:	1
> 13 PHONE NR:		> 73 BOTTLE OXYGEN:	NONE	TOTAL:	27
> 14 MANAGER:	DAVID C. GAINES	> 74 BULK OXYGEN:	HIGH/LOW	93 HELICOPTERS:	12
> 15 ADDRESS:	2550 LAUGHLIN VIEW DR BULLHEAD CITY, AZ 86429	75 TSNT STORAGE:	TIE	94 GLIDERS:	0
> 16 PHONE NR:	928-754-2134	76 OTHER SERVICES:		95 MILITARY:	0
> 17 ATTENDANCE SCHEDULE:		AFRT, AMB, CHTR		96 ULTRA-LIGHT:	0
ALL ALL ALL					
		<u>FACILITIES</u>		<u>OPERATIONS</u>	
18 AIRPORT USE:	PUBLIC	> 80 ARPT BCN:	CG	100 AIR CARRIER:	1,458
19 ARPT LAT:	35-09-21.5000N ESTIMATED	> 81 ARPT LGT SKED:	SEE RMK	102 AIR TAXI:	1,746
20 ARPT LONG:	114-33-34.0000W	> 82 UNICOM:		103 G A LOCAL:	7,994
21 ARPT ELEV:	701.0 SURVEYED	> 83 WIND INDICATOR:	YES-L	104 G A ITRNRT:	11,238
22 ACREAGE:	650	84 SEGMENTED CIRCLE:	YES	105 MILITARY:	625
> 23 RIGHT TRAFFIC:	16	85 CONTROL TWR:	YES	TOTAL:	23,061
> 24 NON-COMM LANDING:	NO	86 FSS:	PRESCOTT	OPERATIONS FOR 12	
25 NPIAS/FED AGREEMENTS:NGY		87 FSS ON ARPT:	NO	MONTHS ENDING	12/31/2011
> 26 FAR 139 INDEX:	I B S 05/1973	88 FSS PHONE NR:			
		89 TOLL FREE NR:	1-800-WX-BRIEF		

<u>RUNWAY DATA</u>					
> 30 RUNWAY IDENT:		16/34			
> 31 LENGTH:		7,500			
> 32 WIDTH:		150			
> 33 SURF TYPE-COND:		ASPH-G			
> 34 SURF TREATMENT:					
35 GROSS WT:	SW	75.0			
36 (IN THSDS)	DW	200.0			
37	DTW	400.0			
38	DDTW				
> 39 PCN:					
<u>LIGHTING/APCH AIDS</u>					
> 40 EDGE INTENSITY:		MED			
> 42 RWY MARK TYPE-COND:		NPI - G / PIR - G	- / -	- / -	- / -
> 43 VGSi:		P4L / P4L	/	/	/
44 THR CROSSING HGT:		46 / 45	/	/	/
45 VISUAL GLIDE ANGLE:		3.00 / 3.00	/	/	/
> 46 CNTRLN-TDZ:		- / -	- / -	- / -	- / -
> 47 RVR-RVV:		- / -	- / -	- / -	- / -
> 48 REIL:		Y / Y	/	/	/
> 49 APCH LIGHTS:		/	/	/	/
<u>OBSTRUCTION DATA</u>					
50 FAR 77 CATEGORY:		C / C	/	/	/
> 51 DISPLACED THR:		/	/	/	/
> 52 CTLG OBSTN:		POLE /	/	/	/
> 53 OBSTN MARKED/LGTD:		/	/	/	/
> 54 HGT ABOVE RWY END:		123 /	/	/	/
> 55 DIST FROM RWY END:		3,200 /	/	/	/
> 56 CNTRLN OFFSET:		550L /	/	/	/
57 OBSTN CLNC SLOPE:		24:1 / 50:1	/	/	/
58 CLOSE-IN OBSTN:		N / N	/	/	/
<u>DECLARED DISTANCES</u>					
> 60 TAKE OFF RUN AVBL (TORA):		/	/	/	/
> 61 TAKE OFF DIST AVBL (TODA):		/	/	/	/
> 62 ACLT STOP DIST AVBL (ASDA):		/	/	/	/
> 63 LNDG DIST AVBL (LDA):		/	/	/	/

(>) ARPT MGR PLEASE ADVISE FSS IN ITEM 86 WHEN CHANGES OCCUR TO ITEMS PRECEDED BY >

> 110 REMARKS:

A 014 DAVID C. GAINES - EMAIL: ALPHA1@FRONTIERNET.NET  
A 017 FOR SVCS & FUEL 0600-0000 CTC FREQ 122.85 , BTN 0000-0600 SVCS & FUEL NOT AVBL.  
A 081 RWY APT ACTVT MIRL RY 16/34 - CTAF.  
A 110-001 MTNS NW, NE, E AND SE.  
A 110-005 RISING TERRAIN TO THE NORTH & SOUTH OF RY ENDS.  
A 110-006 POWERLINE PARALLEL TO RY 16 625 FT LEFT OF CNTRLN 1300 FT FROM RY END 66 FT HIGH.  
A 110-007 TPA FOR LIGHT ACFT 999 FT AGL, TPA FOR HIGH PERFORMANCE ACFT 1499 FT AGL.

111 INSPECTOR: ( F ) 112 LAST INSP: 03/15/2012 113 LAST INFO REQ: 09/20/2011

