

# FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for

**ENTERPRISE PRODUCTS OPERATING LLC  
TEXAS CITY (BP METER), TEXAS**

**Satellite Earth Station**

Prepared By:  
COMSEARCH  
19700 Janelia Farm Boulevard  
Ashburn, Virginia 20147  
March 18, 2011

## TABLE OF CONTENTS

1. CONCLUSIONS .....	3
2. SUMMARY OF RESULTS.....	4
3. SUPPLEMENTAL SHOWING .....	5
4. EARTH STATION COORDINATION DATA .....	6
5. CERTIFICATION .....	10

# 1. CONCLUSIONS

An interference study considering all existing, proposed and prior coordinated microwave facilities within the coordination contours of the proposed earth station demonstrates that this site will operate satisfactorily with the common carrier microwave environment, based upon the restrictions noted in the Summary of Results (Section 2).

## 2. SUMMARY OF RESULTS

A number of great circle interference cases were identified during the interference study of the proposed earth station. Each of the cases, which exceeded the interference objective on a line-of-sight basis, was profiled and the propagation losses estimated using NBS TN101 (Revised) techniques. The losses were found to be sufficient to reduce the signal levels to acceptable magnitudes in every case.

The following companies reported potential great circle interference conflicts that did not meet the objectives on a line-of-sight basis. When over-the-horizon losses and frequency offset are considered on the interfering paths, sufficient losses exist to negate harmful interference from occurring with the proposed transmit-receive earth station. Further, the receive spectrum will be limited to frequencies 3922 to 3942 MHz, and the transmit spectrum will be limited to frequencies 6147 to 6167 MHz.

Company

None

No carriers reported potential interference cases.

### 3. SUPPLEMENTAL SHOWING

Pursuant to Part 25.203(c) of the FCC Rules and Regulations, the satellite earth station proposed in this application was coordinated by Comsearch using computer techniques and in accordance with Part 25 of the FCC Rules and Regulations.

Expedited coordination data for this earth station was sent to the below listed carriers with a letter dated March 7, 2011.

#### Company

AT&T COMM. OF THE SOUTH CENTRAL STATES  
American National Insurance Company  
Bell Atlantic Mobile Allentown-Verizon W  
CENTERPOINT ENERGY INC  
Central Telephone Company of Texas  
ENTERPRISE PRODUCTS OPERATING LLC  
ERF Wireless Bundled Services, Inc.  
Equistar Chemicals, LP  
GTE Mobilnet of South Texas LTD Partners  
GTE Mobilnet of Texas RSA #17 LTD Prtnsh  
Great Western Communications, LLC  
Greater Harris County 911 Emergency Net  
Harris County ITC  
Houston, City of  
International Communications Group, Inc.  
LOWER COLORADO RIVER AUTHORITY  
MCI Communications Services Inc.  
METROPOLITAN AREA NETWORKS, INC.  
SAN BERNARD ELECTRIC COOPERATIVE INC  
Sam Houston Electric Cooperative  
San Antonio MTA, L.P.  
Stratos Offshore Services Company  
TEXAS NEW MEXICO POWER COMPANY  
Texas Eastern Communications, Inc.  
Texas RSA 18 Limited Partnership  
Transcontinental Gas Pipeline Corp.  
Trunkline Gas Company, LLC  
Union Pacific Railroad Company  
Verizon Wireless Texas, LLC

## **4. EARTH STATION COORDINATION DATA**

This section presents the data pertinent to frequency coordination of the proposed earth station that was circulated to all carriers within its coordination contours.

# COMSEARCH

## Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147  
(703)726-5500 <http://www.comsearch.com>

Date: 03/18/2011  
Job Number: 110307COMSJC11

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### Administrative Information

Status ENGINEER PROPOSAL  
Call Sign E040163  
Licensee Code ENPROD  
Licensee Name ENTERPRISE PRODUCTS OPERATING LLC

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### Site Information TEXAS CITY, TEXAS

Venue Name BP METER  
Latitude (NAD 83) 29° 21' 57.4" N  
Longitude (NAD 83) 94° 55' 8.7" W  
Climate Zone B  
Rain Zone 2  
Ground Elevation (AMSL) 1.83 m / 6.0 ft

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### Link Information

Satellite Type Geostationary  
Mode TR - Transmit-Receive  
Modulation Digital  
Satellite Arc 72° W to 87° West Longitude  
Azimuth Range 139.2° to 164.2°  
Corresponding Elevation Angles 47.5° / 54.7°  
Antenna Centerline (AGL) 1.83 m / 6.0 ft

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### Antenna Information

#### Receive

#### Transmit

Manufacturer	Andrew Corporation	Andrew Corporation			
Model	2.4 Meter	2.4 Meter			
Gain / Diameter	38.0 dBi / 2.4 m	42.0 dBi / 2.4 m			
3-dB / 15-dB Beamwidth	2.20° / 3.90°	1.30° / 2.46°			
Max Available RF Power (dBW/4 kHz)		-14.1			
(dBW/MHz)		9.9			
Maximum EIRP (dBW/4 kHz)		27.9			
(dBW/MHz)		51.9			
Interference Objectives:	Long Term	-156.0 dBW/MHz	20%	-154.0 dBW/4 kHz	20%
	Short Term	-146.0 dBW/MHz	0.01%	-131.0 dBW/4 kHz	0.0025%

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### Frequency Information

#### Receive 4.0 GHz

#### Transmit 6.1 GHz

Emission / Frequency Range (MHz) 205KG7W - 768KG7W / 3922.0 - 3942.0 205KG7W - 768KG7W / 6147.0 - 6167.0

Max Great Circle Coordination Distance 413.1 km / 256.7 mi 146.0 km / 90.7 mi  
Precipitation Scatter Contour Radius 100.0 km / 62.1 mi 100.0 km / 62.1 mi

# COMSEARCH

## Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147  
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### Coordination Values

### TEXAS CITY, TX

Licensee Name ENTERPRISE PRODUCTS OPERATING LLC  
Latitude (NAD 83) 29° 21' 57.4" N  
Longitude (NAD 83) 94° 55' 8.7" W  
Ground Elevation (AMSL) 1.83 m / 6.0 ft  
Antenna Centerline (AGL) 1.83 m / 6.0 ft  
Antenna Model Andrew Corporation 2.4 Meter  
Antenna Mode Receive 4.0 GHz Transmit 6.1 GHz  
Interference Objectives: Long Term -156.0 dBW/MHz 20% -154.0 dBW/4 kHz 20%  
Short Term -146.0 dBW/MHz 0.01% -131.0 dBW/4 kHz 0.0025%  
Max Available RF Power -14.1 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz		Transmit 6.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	120.76	-10.00	412.20	-10.00	145.67
5	0.00	118.10	-10.00	412.20	-10.00	145.67
10	0.00	115.28	-10.00	412.20	-10.00	145.67
15	0.00	112.33	-10.00	412.20	-10.00	145.67
20	0.00	109.25	-10.00	412.20	-10.00	145.67
25	0.00	106.09	-10.00	412.20	-10.00	145.67
30	0.00	102.85	-10.00	412.20	-10.00	145.67
35	0.00	99.56	-10.00	412.20	-10.00	145.67
40	0.00	96.22	-10.00	412.20	-10.00	145.67
45	0.00	92.86	-10.00	412.20	-10.00	145.67
50	0.00	89.48	-10.00	412.20	-10.00	145.67
55	0.00	86.11	-10.00	412.20	-10.00	145.67
60	0.00	82.75	-10.00	412.20	-10.00	145.67
65	0.00	79.43	-10.00	412.20	-10.00	145.67
70	0.00	76.15	-10.00	412.20	-10.00	145.67
75	0.00	72.93	-10.00	412.20	-10.00	145.67
80	0.00	69.79	-10.00	412.20	-10.00	145.67
85	0.00	66.76	-10.00	412.20	-10.00	145.67
90	0.00	63.84	-10.00	412.20	-10.00	145.67
95	0.00	61.07	-10.00	412.20	-10.00	145.67
100	0.00	58.47	-10.00	412.20	-10.00	145.67
105	0.00	56.07	-10.00	412.20	-10.00	145.67
110	0.00	53.90	-10.00	412.20	-10.00	145.67
115	0.00	52.00	-10.00	412.20	-10.00	145.67
120	0.00	50.39	-10.00	412.20	-10.00	145.67
125	0.00	49.12	-10.00	412.20	-10.00	145.67
130	0.00	48.21	-10.00	412.20	-10.00	145.67
135	0.00	47.67	-9.96	412.74	-9.96	145.84
140	0.00	47.53	-9.93	413.13	-9.93	145.96
145	0.00	47.79	-9.98	412.39	-9.98	145.73
150	0.00	48.45	-10.00	412.20	-10.00	145.67
155	0.00	49.47	-10.00	412.20	-10.00	145.67
160	0.00	50.85	-10.00	412.20	-10.00	145.67
165	0.00	52.55	-10.00	412.20	-10.00	145.67
170	0.00	54.28	-10.00	412.20	-10.00	145.67
175	0.00	55.38	-10.00	412.20	-10.00	145.67
180	0.00	56.19	-10.00	412.20	-10.00	145.67
185	0.00	57.27	-10.00	412.20	-10.00	145.67



# COMSEARCH

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### Coordination Values

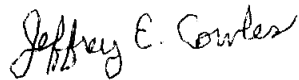
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Interference Objectives: Long Term -156.0 dBW/MHz 20% -154.0 dBW/4 kHz 20%  
Short Term -146.0 dBW/MHz 0.01% -131.0 dBW/4 kHz 0.0025%  
Max Available RF Power -14.1 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz		Transmit 6.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	58.63	-10.00	412.20	-10.00	145.67
195	0.00	60.22	-10.00	412.20	-10.00	145.67
200	0.00	62.03	-10.00	412.20	-10.00	145.67
205	0.00	64.05	-10.00	412.20	-10.00	145.67
210	0.00	66.23	-10.00	412.20	-10.00	145.67
215	0.00	68.57	-10.00	412.20	-10.00	145.67
220	0.00	71.04	-10.00	412.20	-10.00	145.67
225	0.00	73.63	-10.00	412.20	-10.00	145.67
230	0.00	76.30	-10.00	412.20	-10.00	145.67
235	0.00	79.05	-10.00	412.20	-10.00	145.67
240	0.00	81.86	-10.00	412.20	-10.00	145.67
245	0.00	84.71	-10.00	412.20	-10.00	145.67
250	0.00	87.59	-10.00	412.20	-10.00	145.67
255	0.00	90.48	-10.00	412.20	-10.00	145.67
260	0.00	93.37	-10.00	412.20	-10.00	145.67
265	0.00	96.24	-10.00	412.20	-10.00	145.67
270	0.00	99.08	-10.00	412.20	-10.00	145.67
275	0.00	101.87	-10.00	412.20	-10.00	145.67
280	0.00	104.60	-10.00	412.20	-10.00	145.67
285	0.00	107.25	-10.00	412.20	-10.00	145.67
290	0.00	109.79	-10.00	412.20	-10.00	145.67
295	0.00	112.22	-10.00	412.20	-10.00	145.67
300	0.00	114.51	-10.00	412.20	-10.00	145.67
305	0.00	116.65	-10.00	412.20	-10.00	145.67
310	0.00	118.59	-10.00	412.20	-10.00	145.67
315	0.00	120.34	-10.00	412.20	-10.00	145.67
320	0.00	121.85	-10.00	412.20	-10.00	145.67
325	0.00	123.12	-10.00	412.20	-10.00	145.67
330	0.00	124.11	-10.00	412.20	-10.00	145.67
335	0.00	124.82	-10.00	412.20	-10.00	145.67
340	0.00	125.23	-10.00	412.20	-10.00	145.67
345	0.00	125.34	-10.00	412.20	-10.00	145.67
350	0.00	125.13	-10.00	412.20	-10.00	145.67
355	0.00	123.22	-10.00	412.20	-10.00	145.67

## 5. CERTIFICATION

I HEREBY CERTIFY THAT I AM THE TECHNICALLY QUALIFIED PERSON RESPONSIBLE FOR THE PREPARATION OF THE FREQUENCY COORDINATION DATA CONTAINED IN THIS APPLICATION, THAT I AM FAMILIAR WITH PARTS 101 AND 25 OF THE FCC RULES AND REGULATIONS, THAT I HAVE EITHER PREPARED OR REVIEWED THE FREQUENCY COORDINATION DATA SUBMITTED WITH THIS APPLICATION, AND THAT IT IS COMPLETE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.



Jeffrey E. Cowles  
Engineer III, Telecommunications  
COMSEARCH  
19700 Janelia Farm Boulevard  
Ashburn, Va. 20147

DATED: March 18, 2011