BART Source-Specific CALPUFF Modeling Analysis

Visibility Impairment Modeling Analysis For DCP Midstream Partners, LLP Fullerton Gas Plant

Andrews County, Texas

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Table of Contents

1. INTRODUCTION 1

1.1. Modeling Process Overview 2
1.2. Source Location and Relevant Class I Areas 3

2. BART SOURCE DESCRIPTION 5

3. EMISSION ESTIMATES AND STACK PARAMETERS 5

4. CALMET/CALPUFF MODELING METHODOLOGY 7

4.1. Methodology 7
4.2. CALMET Model Configuration and Application 8
4.3. CALPUFF Model Configuration and Application 8
4.3.1 Model Codes 8
4.3.2 Domain Definition 8
4.3.3 Model Set-up 9
4.3.4 Emission Input Development 9
4.3.5 Additional CALPUFF Input Information and Settings 10

5. CALPOST PROCESSING 12

5.1. Visibility Assessment 12

6. RESULTS 14

6.1. Modeled Visibility Impacts 14
6.2. Electronic Records 14

7. REFERENCES 15

Tables

Table 1-1 Class I Areas Included in Source-Specific Modeling 3
Table 3-1 Stack Parameters and Emission Rates 6
Table 3-2 Negligible Emissions Combined with the SRU Incinerator Stack Emissions 6
Table 6-1 Maximum Modeled Visibility Impacts 14
Table 6-2 Electronic Files 15

Figures

Figure 1-1 Class 1 Areas in CENRAP Southern Regional Domain 4

Appendices

Appendix A TCEQ CALPUFF Control File Inputs A-1
Appendix B TCEQ CALPOST Control File Inputs B-1
Appendix C Class I Receptors in Lambert Conformal Coordinates C-1
Appendix D Monthly F(RH) Values from TCEQ Protocol D-1
Appendix E Average Natural Levels of Aerosol Components from TCEQ Protocol E-1
Appendix F Description of Model Recompilation F-1

1.0 INTRODUCTION

Federal law requires Best Available Retrofit Technology (BART) for any BART-eligible source that "emits any air pollutant which may reasonably be anticipated to cause or contribute to any impairment of visibility" in any mandatory Class I federal area (EPA 1999). Pursuant to federal regulations, states have the option of exempting a BART-eligible source from the BART requirements based on dispersion modeling demonstrating that the source cannot reasonably be anticipated to cause or contribute to visibility impairment in a Class I area. States, including Texas, have established criteria and procedures for determining which sources will be subject to the BART requirement.

According to 40 CFR Part 51, Appendix Y (BART guideline), a BART-eligible source is considered to "contribute" to visibility impairment in a Class I area if the modeled change in deciviews is equal to or greater than the "contribution threshold." Any BART-eligible source determined to cause or contribute to visibility impairment in any Class I area is subject to BART. Based on current regulatory guidance a "contribution threshold" of 0.5 dv is considered the value where a modeled BART-eligible source may contribute to visibility impairment.

In September 2006, TCEQ (Texas Commission on Environmental Qualilty) released the results of a regional BART screening analysis that included all BART eligible sources in the state and utilized the CAMx model. The screening analysis was designed to exempt sources that have a minimal contribution to regional haze from further analysis. For those BART eligible sources that did not pass the regional screening modeling (including DCP Midstream), the results also show which pollutants and Class 1 areas are required for source-specific modeling. DCP Midstream Partners, LLP (DCP Midstream) has performed CALPUFF modeling to determine if the contribution threshold of 0.5 dv is exceeded at any of the 16 Class 1 Areas identified by the TCEQ.

The initial phase of the BART modeling process is referred to as the source-specific subject-to-BART screening analysis. The visibility impairment modeling includes all BART eligible units located at the Fullerton facility. As a conservative assumption the modeling is based on the hourly permitted maximum allowable rate extrapolated to a 24-hour averaging period. It includes the following visibility impairing compounds SO_2, NO_x, and direct PM_{10}.

The modeling methodology used in this analysis conforms to the TCEQ BART modeling protocol for CALPUFF (TCEQ 2007). The details of the modeling methodology were documented in the protocol submitted to TCEQ by DCP Midstream on April 6, 2007. Any deviations from the protocol are documented in the appropriate sections of this report.

1.1 Modeling Process Overview

In September 2006, TCEQ released the results of a regional BART screening analysis that included all BART-eligible sources in the state and utilized the CAMx model. The screening analysis was designed to reduce the burden of BART modeling for sources that have a minimal contribution to regional haze. None of the modeled BART-eligible sources showed a significant impact on visibility due to VOC emissions and therefore none of the modeled sources are required to include VOC in source-specific modeling. However, the modeled source group that included DCP Midstream did not pass the screening for SO_2 and NO_x. It showed a significant impact due to SO_2 and NO_x at 16 Class 1 areas listed in Table 1-1. For those BART eligible sources that did not pass the regional screening modeling (including DCP Midstream), source-specific modeling is required.

For each BART-eligible unit at the Fullerton Gas Plant, the short-term emissions rates of SO_2, NO_x, and direct PM_{10} given in Section 3 were used for source-specific CALPUFF modeling. CALPOST was then used to estimate the maximum daily change in visibility associated with the operation of BART eligible sources compared with natural background conditions at each applicable Federal Class I area. Changes in visibility are provided by the model in delta-deciview units. A source-specific screening level CALPUFF modeling analysis was conducted based on procedures discussed in the TCEQ Guidelines. Although the federal BART rule specifies using the 98th percentile maximum impact for comparison to the threshold of 0.5 delta-deciviews, the TCEQ has recommend using the 1st high visibility impact if using the pre-processed CALMET data from Central Regional Air Partnership (CENRAP). This CALMET data set was developed using the "No-Obs" mode, without the use of observational data. Therefore, as a conservative assumption, the highest predicted delta-deciview at each applicable Class I area has been compared to the "contribution threshold" to determine if the source contributes to visibility impairment.

The CALPUFF modeling system consists of three main processors, CALMET, CALPUFF, and CALPOST. CALMET is the meteorological model that generates hourly three-dimensional meteorological fields of variables such as wind and temperature. In this case the pre-processed meteorological CALMET data was provided by CENRAP. CALPUFF simulates the transport, dispersion, and transformation of pollutants emitted from a source and calculates hourly concentration values for visibility impairing compounds at each receptor located in the modeling domain. CALPOST calculates time-averaged concentration values from the CALPUFF predictions and performs visibility calculations like those described in the Section 6.1.

1.2 Facility Location and Relevant Class I Areas

The Fullerton Gas Plant is located in Andrews County, Texas. CENRAP has made available three processed CALMET meteorological data sets, one for each of three sub-regional domains that together comprise the entire CENRAP region. The southern CALMET domain was used by DCP Midstream for performing the CALPUFF screening analyses for all

applicable Class I areas. Table 1-1 list the 16 Class I areas that were evaluated, as requested by the TCEQ

Table 1-1. Class I Areas Included in Source-Specific Modeling

Class I Area Abbreviation	Class 1 Area Name	Approximate distance from DCP Midstream to the Class 1 Area (Miles)
BAND	Bandelier National Monument, NM	300
BIBE	Big Bend National Park, TX	190
BOAP	Bosque del Apache National Wildlife Refuge, NM	250
BRET	Breton Wilderness Area, LA	845
CACR	Caney Creek Wilderness Area, AR	525
CAVE	Carlsbad Caverns National Park, NM	95
GRSA	Great Sand Dunes National Park, CO	400
GUMO	Guadalupe Mountains National Park, TX	120
HEGL	Hercules-Glades Wilderness Area, MO	635
MING	Mingo Wilderness Area, MO	785
PECO	Pecos Wilderness Area, NM	275
SACR	Salt Creek Wilderness Area, NM	125
UPBU	Upper Buffalo Wilderness Area, AR	590
WHIT	White Mountain Wilderness Area, NM	190
WHPE	Wheeler Peak Wilderness Area, NM	325
WIMO	Wichita Mountains Wilderness., OK	280

Figure 1-1 displays the location of the facility and the 16 Class I areas in the south domain.

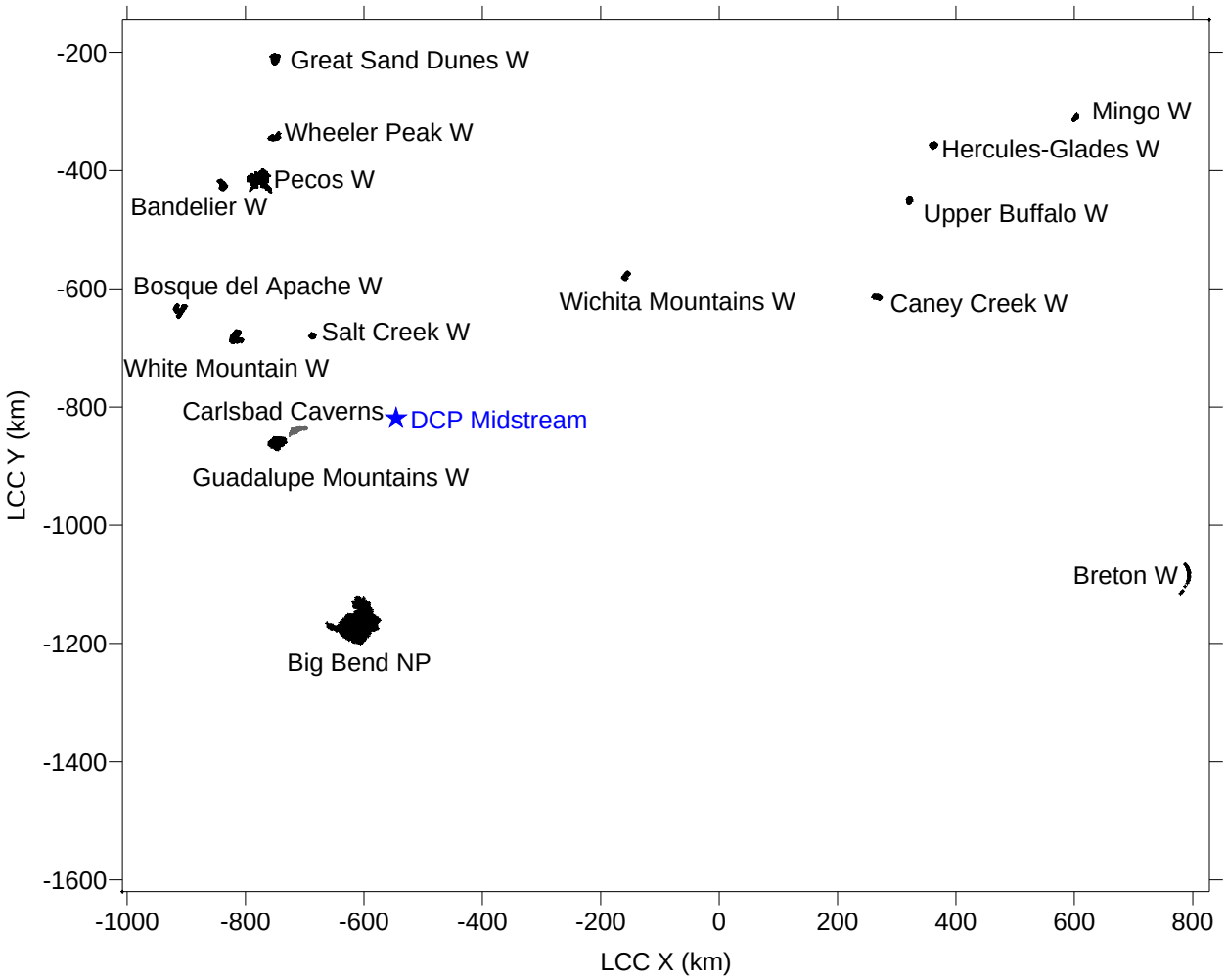

Figure 1-1 Class 1 Areas in CENRAP Southern Regional Domain

2.0 BART SOURCE DESCRIPTION

The sulfur recovery unit (SRU) and associated equipment is the only BART-eligible unit at the Fullerton Gas Plant (Garza 2007). The SRU and associated incinerator (Stack ID INC-1) were built in 1974 and began operation in 1975. The Claus-type SRU efficiently recovers more than 95 percent of the sulfur in the acid gas stream produced from amine desulfurization of the plant's inlet gas.

3.0 EMISSION ESTIMATES AND STACK PARAMETERS

According to the TCEQ and CENRAP BART guidelines, the emissions estimates used in the models are intended to reflect steady-state operating conditions during periods of high capacity utilization. These emission rates are not intended to reflect periods of start-up, shutdown, maintenance, or malfunction, as such emission rates could produce higher than normal effects than would be typical of most facilities. Short-term emission rates (24-hours) for SO_2, NO_x, and PM_{10} should be modeled since visibility impacts are calculated for a 24-hour averaging period.

For the source-specific screening modeling, DCP Midstream has used the short-term emission rates shown in Table 3-1. These emission rates reflect hourly permitted maximum allowable emission rates contained in the SRU permit renewal of January 14, 2004 (Permit No. 2211A). Negligible emissions from equipment associated with the SRU, such as the glycol regeneration heater stack and emergency flare pilot flame, have been combined with the SRU incinerator stack emissions. These emissions are shown in Table 3-2. Combining these emissions with the SRU incinerator stack emissions would not appreciably affect modeling results at the distances modeled for the Class I areas. The stack parameters were also taken from the SRU permit renewal application.

Table 3-1. Stack Parameters and Emission Rates

DCP Midstream, Fullerton Gas Plant						
Sulfur Recovery Unit (INC-1)						
Stack Parameters				**Model Inputs**		
Stack Height	215	ft		Stack Height	65.5	M
Stack Diameter	38	in		Stack Diameter	0.97	M
Exit Velocity	66	ft/s		Exit Velocity	20	m/s
Exit Temperature	1175	deg. F		Exit Temperature	811	K
Volumetric Flow Rate	41,700	ft^3/min		Vol. Flow Rate	1181	m^3/min
Stack Location						
UTM Zone 13 Easting (NAD27)	709343.888	m		LCC X Easting	-545.6711	Km
UTM Zone 13 Northing (NAD27)	3584700.054	m		LCC Y Northing	-819.2354	Km
Elevation	1010.4	ft		Elevation	1010.4	M
				Converted to CALPUFF coordinates		
Emission Information						
NO_x Rate	1.37	lbs/hr		NO_x Rate	0.1726	g/s
PM_{10} Rate	0.11	lbs/hr		PM_{10} Rate	0.0139	g/s
SO_2 Rate	589.06	lbs/hr		SO_2 Rate	74.22	g/s

Table 3-2. Negligible Emissions Combined with the SRU Incinerator Stack Emissions

	Permitted Maximum Allowable Rate (lb/hr)		
Emissions Point	NO_x	SO_2	PM_{10}
Glycol Regen Heater Stack (H-44)	0.33	0.01	0.03
Emergency Flare Pilot (AGFLR-1)	0.01	0.01	---

4.0 CALMET/CALPUFF MODELING METHODOLOGY

CALPUFF source-specific modeling was performed consistent with the procedures set forth in the modeling protocol (URS 2007). A standard set of default meteorological, air quality, and dispersion conditions were provided by CENRAP. These previously developed CENRAP CALMET meteorological data files were used for the modeling analysis as indicated in the TCEQ Guidelines.

4.1 Methodology

The BART CALPUFF source-specific screening methodology recommended by TCEQ uses the CALPUFF model with up to three years of meteorological data and the standard compliment of model algorithms invoked. To ensure that no sources pass the screening test when they should fail, the screening level approach uses the most conservative of all the conditions likely to be examined for the source in question. For example, there are many factors that influence the contribution of a source beyond just the distance to the Class I area. The frequency of winds transporting the pollutants toward the Class I area may often be important to include for a reliable screening analysis. Also, a more distant Class I area downwind in the predominant wind direction from a source may receive a higher visibility impact than a closer Class I area that is infrequently downwind of the source. Further, there may be correlations between winds from certain directions and meteorological conditions conducive for higher visibility impacts. Such effects and relationships are addressed in the screening approach. It is designed to ensure conservatism by considering the highest visibility impact value over a three-year simulation period rather than the 98th percentile value in making a determination of no contribution to visibility impairment and also by using conservative model settings.

The impact of the source or sources was calculated from the daily visibility values for each receptor by determining the change in deciviews compared against natural visibility conditions. EPA's "Guidance for Estimating Natural Visibility Conditions Under the Regional Haze Rule," EPA-454/B03-005 (September 2003) lists recommended natural visibility conditions. To determine whether a source may reasonably be anticipated to cause or contribute to visibility impairment at Class I area, the impacts predicted by CALPUFF are compared against the pertinent natural visibility background and the threshold that has been selected.

4.2 CALMET Model Configuration and Application

Chapter 5 within the CENRAP Guidelines discusses in detail the model configurations used to generate the common CALMET meteorological files for screening of BART-eligible sources. The configuration is reported to follow the IWAQM recommendations (EPA, 1998, Appendix A), except as noted in the Guidelines. For CALPUFF screening assessments, there is no need to compile CALMET inputs, run the CALMET model, or evaluate the outputs as the meteorological data is provided by CENRAP.

The model-ready meteorological data sets have been developed by CENRAP for three CENRAP sub-regional domains. The DCP Midstream facility is located in the southern domain which is depicted in Figure 1-1. Due to the locations of the Class 1 areas that were evaluated, the model was run over the entire CENRAP southern region domain.

4.3 CALPUFF Model Configuration and Application

4.3.1 Model Codes

The appropriate model codes were downloaded from www.src.com. The sequence of model processors for the screening analysis was CALPUFF followed by CALPOST. CALMET and associated preprocessors are not discussed since CENRAP performed these model runs.

For the screening level analysis, the "EPA-Approved" version of the CALPUFF modeling system (CALPUFF version 5.711a, and CALPOST version 5.51) was used.

The CALMET data set provided by CENRAP for the southern region includes a large domain of 306 grid cells in the X direction. The listed versions of CALPUFF and CALPOST allow a maximum of 265 grid cells in the X direction. All of these programs were recompiled in order to allow the use of the larger meteorological domain. Details of the model recompilation are provided in Appendix F.

4.3.2 Domain Definition

The meteorological modeling data sets cover three contiguous years (2001, 2002, and 2003) and were resolved to a 6 km horizontal resolution grid using MM5 data. Details of the modeling domains and the meteorological data bases for 2001, 2002, and 2003 are discussed in detail in the CENRAP Guidelines.

<u>Receptor Network and Class I Receptors.</u> Discrete receptor coordinate data for the 16 applicable Federal Class I areas were developed using the coordinates provided by the National Park Service (NPS). The receptor elevations provided by the NPS were used for modeling. Appendix C contains a listing of the Lambert Conformal coordinates for each Class I area with the associated receptors heights.

4.3.3 Model Set-Up

The screening analysis used a CALPUFF computational domain that includes all applicable Class I areas and a 50 kilometer buffer around each Class I area and the facility. Due to the large number and sprawling locations of the Class 1 areas that were modeled, the entire CENRAP southern region domain was modeled. A reduced computational domain was not used.

Appendix A contains a summary of the input options which were selected when performing CALPUFF modeling. Appendix B contains a summary of the input options which were selected when performing CALPOST modeling.

4.3.4 Emissions Input Development

Stack Parameters. Point source stack parameters required for modeling BART-eligible units include: height of the stack opening from ground, inside diameter, exit velocity, exit gas temperature, elevation of ground, and location coordinates of the stack. Stack parameters are provided in Table 3-1.

Stack Emission Rates. Emission rates for the CALPUFF screening analysis followed EPA's BART guidance and recent staff recommendations. Source terms in the initial modeling were based on maximum permitted emission rates instead of emissions during periods of high capacity utilization associated with normal operating conditions. While Continuous Emissions Monitoring data is available for the SRU incinerator stack, using the permitted maximum allowable rates represents a conservative assumption

The compounds that were modeled include SO_2, NO_x, and PM_{10}. Emission rates are provided in Tables 3-1 and 3-2.

Emissions Speciation. Most applicable PM speciation profiles for the highest 24-hour average actual emissions are not readily available to DCP Midstream. However, DCP Midstream understands that reliable estimates are necessary given the widely varying effects of different types of particulate matter on visibility.

Currently, data are quite limited on appropriate speciation of organic/inorganic and filterable/condensable emissions by source category. While speciation profiles are available for gas- and oil-fired combustion turbines and coal combustion processes, detailed profiles for the full range of BART-eligible sources is lacking. In practice, except in cases where facilities operate continuous emission monitors on all affected equipment, there is likely to be limited information regarding actual emissions in the requisite time resolution (24-hour average), much less speciation profiles for PM species.

For this reason, as a conservative assumption, all particulate emissions were modeled as fine particulate (i.e., $PM_{2.5}$).

4.3.5 Additional CALPUFF Input Information and Settings

CALPUFF Model Options. The model options, parameter settings, and 'switches' for exercising CALPUFF in the BART screening mode are discussed below. Appendix A contains tables that list the recommended screening configurations for BART modeling as prescribed in the TCEQ BART modeling protocol. The tables also identify the default recommendations from the IWAQM Phase 2 Report (EPA, 1998).

Visibility Modeling Domain. The entire CENRAP southern region was modeled so as to include all applicable Class 1 areas and a 50 km buffer around each area. Some of these Class 1 areas are well over 500 km from the facility. CALPUFF is a long range model, but not a regional model – it best estimates impacts at locations within 500 km of the source. Beyond 500 km CALPUFF tends to overpredict impacts. TCEQ has allowed the use of a regional model (CAMx) to better estimate impacts at Class 1 areas beyond 500 km. DCP Midstream recognizes this option but decided to use CALPUFF to estimate impacts at all of the applicable Class 1 areas, despite the conservative impacts that may be predicted at distant locations.

Dispersion

Building Downwash. DCP Midstream did not include building/structure information for point sources subject to plume downwash. It is unlikely that localized building downwash effects play a role at receptors at least 100 km away.

Puff Dispersion. DCP Midstream used the regulatory CALPUFF default setting of MSDISP=3, which utilizes the Pasquill-Gifford dispersion coefficients.

Puff Representation. DCP Midstream used the default integrated puff sampling methodology in CALPUFF.

Puff Splitting. DCP Midstream did not use the puff-splitting options, as per recommendation in the TCEQ draft BART modeling protocol.

Chemistry

Chemical Mechanism. The MESOPUFF II module was used for the screening BART application.

Species Modeled. Species that were modeled in the screening assessment include SO_2, SO_4, NO_x, HNO_3, NO_3, and $PM_{2.5}$.

Background Ozone Concentrations. Hourly ozone concentration data for 2001, 2002, and 2003 were obtained from TCEQ. Specifically, hourly ozone data for the following monitors were used in the screening analysis: Longview (EPA Site ID 48-

183-001), Kaufman (EPA Site ID 48-257-0005), and Northwest Harris County (EPA Site ID 48-201-0029) (Jamieson 2007).

Background Ammonia Concentrations. The prescribed background ammonia concentration of 3 ppb was used in the screening analysis.

5.0 CALPOST PROCESSING

CALPOST Parameters. Appendix B summarizes the CALPOST post-processor options, parameters, and switches. Tables are presented containing recommended and default configurations for CENRAP BART modeling. While all receptors were included in a single CALPUFF simulation (except for CAVE and PECO which were modeled separately) DCP Midstream calculated the visibility impacts in CALPOST for each Class I area separately using the NDRECP parameter. It specifies the receptor range that was processed in CALPOST.

5.1 Visibility Assessment

Visibility Impacts from BART-Eligible Sources

Visibility Impact Method. CALPOST was run using Method 6 (MVISBK=6) for calculating extinction. That is, monthly f(RH) adjustment factors were applied directly to the background and modeled sulfate and nitrate concentrations, as recommended in the BART guidelines.

Monthly average Class I area-specific relative humidity values were employed in the extinction analysis (Appendix D). Species that were considered include SO4, NO_3, and PMF (essentially $PM_{2.5}$). With Method 6, background extinction coefficients are computed from EPA (2003) monthly estimates of concentrations of ammonium sulfate (BKSO4), ammonium nitrate (BKNO3), coarse particulates (BKPMC), organic carbon (BKOC), soil (BKSOIL), and elemental carbon (BKEC). Values for these coefficients are listed in Appendix E. In the screening analyses, the extinction due to Rayleigh scattering (i.e., the scattering of light by natural particles much smaller than the wavelength of the light) was set to 10 Mm-1 (BEXTRAY = 10.0) for all modeled Class I areas.

Impact Threshold. The EPA BART guidance recommends that the threshold value for defining whether a source "contributes" to visibility impairment is 0.5 dv change from natural conditions. States may set a lower threshold. Texas has opted to use the 0.5 dv threshold.

6.0 RESULTS

6.1 Modeled Visibility Impacts

Maximum visibility impacts at each of the 16 Class I areas considered are presented in Table 6-1 below. In accordance with TCEQ BART modeling guidance, the maximum visibility impact, rather than the 98th percentile value, was used for this screening analysis. This was done in order to account for using the CENRAP-developed CALMET datasets without surface and upper air observations. As can be seen in Table 6-1, the highest maximum modeled visibility impact of 0.407 dv occurs in the Salt Creek Wilderness Area of New Mexico in 2001. Also as can be seen in Table 6-1, the maximum modeled impacts for each of the three years of meteorological data no not exceed the 0.5 dv threshold. Accordingly, the DCP Midstream Fullerton Gas Plant is exempt from the remainder of the BART process.

Table 6-1. Maximum Modeled Visibility Impacts

Class I Area Abbreviation	Class 1 Area Name	2001	2002	2003
BAND	Bandelier National Monument, NM	0.069	0.097	0.061
BIBE	Big Bend National Park, TX	0.162	**0.362**	0.105
BOAP	Bosque del Apache National Wildlife Refuge, NM	0.085	0.144	0.114
BRET	Breton Wilderness Area, LA	0.068	0.054	0.07
CACR	Caney Creek Wilderness Area, AR	0.055	0.064	0.066
CAVE	Carlsbad Caverns National Park, NS	0.223	0.327	0.272
GRSA	Great Sand Dunes National Park, CO	0.045	0.136	0.066
GUMO	Guadalupe Mountains National Park, TX	0.163	0.232	**0.313**
HEGL	Hercules-Glades Wilderness Area, MO	0.054	0.056	0.075
MING	Mingo Wilderness Area, MO	0.033	0.117	0.08
PECO	Pecos Wilderness Area, NM	0.132	0.136	0.093
SACR	Salt Creek Wilderness Area, NM	**0.407**	0.231	0.177
UPBU	Upper Buffalo Wilderness Area, AR	0.092	0.077	0.077
WHIT	White Mountain Wilderness Area, NM	0.141	0.230	0.177
WHPE	Wheeler Peak Wilderness Area, NM	0.093	0.149	0.101
WIMO	Wichita Mountains Wilderness, OK	0.259	0.212	0.159
Maximum modeled impact		**0.407**	**0.362**	**0.313**

6.2 Electronic Records

Two CDs containing an electronic archive of this modeling analysis, including a full set of CALPUFF inputs and model output as well as any modified executables used to generate the results, accompanies this report. Table 6-2 provides all the electronic

filenames and file descriptions for the CD archive. Note that the CENRAP 6 km regional CALPUFF-ready meteorology is not included in the archive. The modeling data archive is sufficiently complete as to allow an independent modeler to fully corroborate the CALPUFF screening results.

Table 6-2. Electronic Files

Filename	Folder	Description
CALPUFF.zip	D:\CALPUFF	CALPUFF input and output files
CALPOST_input.zip	D:\CALPOST	CALPOST input files
CALPOST_output.zip	D:\CALPOST	CALPOST output files
Executable.zip	D:\Executables	CALPUFF and CALPOST Executables and associated parameter files
Ozone.zip	D:\Ozone	Ozone data used for background
BART Fullerton Report.doc	D:\	Modeling analysis report

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Appendix A – TCEQ CALPUFF Control File Inputs

Variable	Description	Value	Default	Comments
INPUT GROUP 1: General run control parameters				
METRUN	Control parameter for running all periods in met. File (0=no; 1=yes)	0	Y	
IBYR	Starting year of the CALPUFF run	2002	n/a	2001 and 2003 are the other years modeled
IBMO	Starting month	1	n/a n/a	
IBDY	Starting day	1	n/a	
IBHR	Starting hour	1	n/a	
XBTZ	Base time zone	0.0	n/a	GMT
IRLG	Length of the run (hours)	8760	n/a	2001=8760hrs, 2003=8748hrs only 12 hrs on 12/31
NSPEC	Total number of species modeled	7	5	
NSE	Number of species emitted	4	3	
METFM	Meteorological data format	1	Y	CALMET unformatted file
AVET	Averaging time (minutes)	60.0	Y	
PGTIME	Averaging time (minutes) for PG - σ_y	60.0	Y	
INPUT GROUP 2: Technical options				
MGAUSS	Control variable determining the vertical distribution used in the near field	1	Y	Gaussian
MCTADJ	Terrain adjustment method	3	Y	Partial plume path adjustment
MCTSG	CALPUFF sub-grid scale complex terrain module (CTSG) flag	0	Y	CTSG not modeled
MSLUG	Near-field puffs are modeled as elongated “slugs”?	0	Y	No
MTRANS	Transitional plume rise modeled?	1	Y	Transitional plume rise computed
MTIP	Stack tip downwash modeled?	1	Y	Yes
MBDW	Method used to simulate building downwash?	1	Y	ISC method
MSHEAR	Vertical wind shear above stack top modeled in plume rise?	0	Y	No
MSPLIT	Puff splitting allowed?	0	Y	No
MCHEM	Chemical mechanism flag	1	Y	Transformation rates computed internally (MESOPUFF II scheme)
MAQCHEM	Aqueous phase transformation flag	0	Y	Aqueous phase not modeled
MWET	Wet removal modeled?	1	Y	Yes
MDRY	Dry deposition modeled?	1	Y	Yes

Variable	Description	Value	Default	Comments
MDISP	Method used to compute dispersion coefficients	3	Y	PG dispersion coefficients in RURAL & MP coefficients in urban areas
MTURBVW	Sigma-v/sigma-theta, sigma-w measurements used?	3	Y	Use both sigma-(v/theta) and sigma-w from PROFILE.DAT Note: not provided
MDISP2	Backup method used to compute dispersion when measured turbulence data are missing	3	Y	PG dispersion coefficients in RURAL & MP coefficients in urban areas
MROUGH	PG sigma-y,z adj. for roughness?	0	Y	No
MPARTL	Partial plume penetration of elevated inversion?	1	Y	Yes
MTINV	Strength of temperature inversion	0	Y	No
MPDF	PDF used for dispersion under convective conditions?	0	Y	No
MSGTIBL	Sub-Grid TIBL module used for shoreline?	0	Y	No
MBCON	Boundary conditions (concentration) modeled?	0	Y	No
MFOG	Configure for FOG model output	0	Y	No
MREG	TEST options specified to see if they conform to regulatory values?	1	Y	Checks made
INPUT GROUP 3: Species list				
CSPEC	Species modeled	SO2 SO4 NOX HNO3 NO3 PM25 PM10	n/a	Modeled: All Emitted: SO2, NOx, PM25, PM10 Dry deposited: SO2(gas), SO4(particle), NOx(gas), HNO3(gas), NO3(particle), PM25(particle), PM10(particle)
INPUT GROUP 4: Map projection and grid control parameters				
PMAP	Map projection	LCC	N	Lambert conformal conic
FEAST	False Easting	0.0	Y	
FNORT	False Northing	0.0	Y	
RLATO	Latitude	40N	n/a	
RLONG	Longitude	97W	n/a	
XLAT1 XLAT2	Matching parallel(s) of latitude for projection	33N 45N	n/a	
DATUM	Datum region for the coordinates	WGS-G	N	WGS-84 GRS 80 spheroid, global coverage (WGS84)

Variable	Description	Value	Default	Comments
NX NY NZ	Meteorological grid: No. X grid cells in meteorological grid No. Y grid cells in meteorological grid No. vertical layers in meteorological grid	306 246 10	n/a	
DGRIDKM	Grid spacing (km)	6	n/a	
ZFACE	Cell face heights (m)	0, 20, 40,80, 160, 320, 640, 1200, 2000, 3000, 4000	n/a	
XORIGKM YORIGKM	Reference coordinates of SW corner of grid cell (1,1) (km)	-1008 -1620	n/a	
IBCOMP JBCOMP IECOMP JECOMP	Computational grid: X index of LL corner Y index of LL corner X index of UR corner Y index of UR corner	1 1 306 246	n/a	
LSAMP IBSAMP JBSAMP IESAMP JESAMP MESHDN	Logical flag indicating if gridded receptors are used X index of LL corner Y index of LL corner X index of UR corner Y index of UR corner Nesting factor of the sampling grid	F 1	- Y	Receptors are only in the Class I areas assessed
INPUT GROUP 5: Output options				
SPECIES	Species (or group) list for output options	1	n/a	Concentrations saved for SO2, SO4, NOx, HNO3, NO3, PM25, PM10
INPUT GROUP 6: Subgrid scale complex terrain (CTSG) inputs				
NHILL	Number of terrain features	0	Y	
NCTREC	Number of special complex terrain receptors	0	Y	
MHILL	Terrain and CTSG receptor data for CTSG hills input in CTDM format?	2	n/a	Hill data created by OPTHILL & input below in subgroup (6b); receptor data in subgroup (6c) note: no data provided
XHILL2M	Factor to convert horizontal dimensions to meters	1	Y	
ZHILL2M	Factor to convert vertical dimensions to meters	1	Y	
XCTDMKM	X-origin of CTDM system relative to CALPUFF coordinate system, in Km	0	n/a	

Variable	Description	Value	Default	Comments
YCTDMKM	Y-origin of CTDM system relative to CALPUFF coordinate system, in Km	0	n/a	
INPUT GROUP 7: Chemical parameters for dry deposition of gases				
SPECIES DIFFUSVTY ALPHA STR REACTVTY MESO RES HENRYS C	Chemical parameters for dry deposition of gases	-	Y Y Y Y Y Y	SO2; NOx; HNO3 0.1509 0.1656 0.1628 1000 1 1 8 8 18 0 5 0 0.04 3.5 8.0*E-8
INPUT GROUP 8: Size parameters for dry deposition of particles				
SPECIES GEO. MASS MEAN DIA.	Single species: mean and standard deviation used to compute deposition velocity for	-	n/a	SO4 NO3 PM25 PM10 0.48 0.48 0.48 0.48
GEO.STAND DEV.	NINT size-ranges; averaged to obtain mean deposition velocity. Grouped species: size distribution specified, standard deviation as "0". Model uses deposition velocity for stated mean diameter.			2 2 2 2
INPUT GROUP 9: Miscellaneous dry deposition parameters				
RCUTR	Reference cuticle resistance	30	Y	
RGR	Reference ground resistance	10	Y	
REACTR	Reference pollutant reactivity	8	Y	
NINT	Number of particle-size intervals to evaluate effective particle deposition velocity	9	Y	
IVEG	Vegetation state in unirrigated areas	1	Y	
INPUT GROUP 10: Wet deposition parameters				
POLL LIQ PRECIP FRZ PRECIP	Scavenging coefficients	-	Y Y Y	SO2 SO4 NOx HNO3 NO3 3E-5 1E-4 0 6E-5 1E-4 0 3E-5 0 0 3E-5
INPUT GROUP 11: Chemistry parameters				
MOZ	Ozone data input option	1	N	
BCKO3	Monthly ozone concentrations	-	N	12*40
BCKNH3	Monthly ammonia concentrations	-	N	12*3
RNITE1	Nighttime SO2 loss rate	0.2	Y	
RNITE2	Nighttime NOx loss rate	2.0	Y	
RNITE3	Nighttime HNO3 formation rate	2.0	Y	
MH2O2	H2O2 data input option	1	Y	
BCKH2O2	Monthly H2O2 concentrations	-	Y	MQACHEM = 0; not used
BCKPMF OFRAC VCNX	Secondary Organic Aerosol options	-	-	MCHEM = 1; thus, not used
INPUT GROUP 12: Misc. Dispersion and computational parameters				

Variable	Description	Value	Default	Comments
SYTDEP	Horizontal size of puff beyond which time-dependent dispersion equations (Heffter) are used.	550	Y	
MHFTSZ	Switch for using Heffter equation for sigma z as above	0	Y	
JSUP	Stability class used to determine plume growth rates for puffs above boundary layer	5	Y	
CONK1	Vertical dispersion constant for stable conditions	0.01	Y	
CONK2	Vertical dispersion constant for neutral/unstable conditions	0.1	Y	
TBD	Factor determining transition-point from Schulman-Scire to Huber-Snyder building downwash scheme	0.5	Y	No building downwash used
IURB1 IURB2	Range of land use categories for which urban dispersion is assumed	10 19	Y Y	METFM=1; not used
ILANDUIN	Land use category for modeling domain	-	-	METFM=1; not used
ZOIN	Roughness length (m) for modeling domain	-	-	METFM=1; not used
XLAIIN	Leaf area index for modeling domain	-	-	METFM=1; not used
ELEVIN	Elevation above sea level	-	-	METFM=1; not used
XLATIN	Latitude (degrees) for met location	-	-	METFM=1; not used
XLONIN	Longitude (degrees) for met location	-	-	METFM=1; not used
ANEMHT	Anemometer height (m)	-	-	METFM=1; not used
ISIGMAV	Form of lateral turbulence data in PROFILE.DAT	1	Y	Read sigma-v
IMIXCTDM	Choice of mixing heights	-	-	METFM=1; not used
XMXLEN	Maximum length of a slug	1	Y	Y
XSAMLEN	Maximum travel distance of a puff/slug during one sampling step	1	Y	
MXNEW	Maximum number of slugs/puffs released from one source during one time step	99	Y	
MXSAM	Maximum number of sampling steps for one puff/slug during one time step	99	Y	
NCOUNT	Number of iterations used when computing the transport wind for a sampling step that includes gradual rise	2	Y	

Variable	Description	Value	Default	Comments
SYMIN	Minimum sigma y for a new puff/slug	1	Y	
SZMIN	Minimum sigma z for a new puff/slug	1	Y	
SVMIN SWMIN	Default minimum turbulence velocities sigma-v and sigma-w for each stability class	-	Y	A B C D E F .5 .5 .5 .5 .5 .5 .2 .12 .08 .06 .03 .016
CDIV	Divergence criterion for dw/dz across puff used to initiate adjustment for horizontal convergence	0, 0	Y	
WSCALM	Minimum wind speed allowed for non-calm conditions. Used as minimum speed returned when using power-law extrapolation toward surface	0.5	Y	
XMAXZI	Maximum mixing height (m)	4000	N	Top interface in CALMET simulation
XMINZI	Minimum mixing height (m)	20	N	
WSCAT	Default wind speed classes	-	Y	1 2 3 4 5 1.54 3.09 5.14 8.23 10.80
PLXO	Default wind speed profile power-law exponents for stabilities 1-6	-	Y ISC RURAL	A B C D E F .07 .07 .10 .15 .35 .55
PTGO	Default potential temperature gradient for stable classes E, F (deg K/m)	-	Y	0.020; 0.035
PPC	Default plume path coefficients for each stability class	-	Y	A B C D E F .5 .5 .5 .5 .35 .35
SL2PF	Slug-to-puff transitions criterion factor equal to sigma-y/length of slug	10	Y	
NSPLIT	Number of puffs that result every time a puff is split	3	Y	
IRESPLIT	Time of day when split puffs are eligible to be split once again; this is typically set once per day, around sunset before nocturnal shear develops	-	N	Hour 18 = 1
ZISPLIT	Split is allowed only if last hour's mixing height (m) exceeds a minimum value	100	Y Y	
ROLDMAX	Split is allowed only if ratio of last hour's mixing ht to the maximum mixing ht experienced by the puff is less than a maximum value	0.25	Y	
NSPLITH	Number of puffs that result every time a puff is split	5	Y	
SYSPLITH	Minimum sigma-y of puff before it may be split	1	Y	

Variable	Description	Value	Default	Comments
SHSPLITH	Minimum puff elongation rate due to wind shear, before it may be split	2	Y	
CNSPLITH	Minimum concentration of each species in puff before it may be split	1E-7	Y	
EPSSLUG	Fractional convergence criterion for numerical SLUG sampling integration	1E-4	Y	
EPSAREA	Fractional convergence criterion for numerical AREA source integration	1E-6	Y	
DSRISE	Trajectory step-length (m) used for numerical rise integration	1	Y	
HTMINBC	Minimum height (m) to which BC puffs are mixed as they are emitted. Actual height is reset to the current mixing height at the release point if greater than this minimum	500	Y	
RSAMPBC	Search radius (in BC segment lengths) about a receptor for sampling nearest BC puff. BC puffs are emitted with a spacing of one segment length, so the search radius should be greater than 1	10	N	
MDEPBC	Near-surface depletion adjustment to concentration profile used when sampling BC puffs?	1	Y	Adjust concentration for depletion
INPUT GROUP 13: Point source parameters				
NPT1	Number of point sources with parameters	-	n/a	
IPTU	Units used for point source emissions	1	Y	
NSPT1	Number of source-species combinations with variable emissions scaling factors	0	Y	
NPT2	Number of point sources with variable emission parameters provided in external file	0	n/a	
INPUT GROUP 14: Area source parameters – Not used				
INPUT GROUP 15: Line source parameters – Not used				
INPUT GROUP 16: Volume source parameters – Not used				
INPUT GROUP 17: Non-gridded (discrete) receptor information				

Variable	Description	Value	Default	Comments
NREC	Number of non-gridded receptors	0 1929	n/a	147 Bandelier 480 Big Bend 168 Bosque del Apache 40 Breton 80 Caney Creek 195 Great Sand 127 Guadalupe 80 Hercules 47 Mingo 55 Salt Creek 72 Upper Buffalo 270 White Mountain 109 Wheeler Park 59 Wichita Mountain

Appendix B – TCEQ CALPOST Control File Inputs

Variable	Description	Value	Default	Comments
INPUT GROUP 1: General run control parameters				
METRUN	Option to run all periods found in met files	0	Y	Run period explicitly defined
ISYR	Starting Year	2002	n/a	2001 and 2003 also modeled
ISMO	Starting month	1	n/a	
IDY	Starting day	1	n/a	
ISHR	Starting hour	1	n/a	
NHRS	Number of hours to process	8760	n/a	2001=8760hrs, 2003=8748hrs only 12 hrs on 12/31
NREP	Process every hour of data?	1	Y	Every hour processed
ASPEC	Species to process	VISIB	n/a	Visibility processing
ILAYER	Layer/deposition code	1	Y	CALPUFF concentrations
A, B	Scaling factors X(new) = X(old) *A + B	0, 0	Y	
LBACK	Add hourly background concentrations/fluxes?	F	Y	
MSOURCE	Option to process source contributions	0	Y	
LG LD	Gridded receptors processed? Discrete receptors processed?	F T	N/Y	Receptors located only in the Class I areas assessed
LCT	CTSG Complex terrain receptors processed?	F	Y	
LDRING	Report results by DISCRETE receptor RING?	F	Y	
NDRECP	Flag for all receptors after the last one assigned is set to "0"	-1	Y	
IBGRID JBGRID IEGRID JEGRID	Range of gridded receptors	-1 -1 -1 -1	Y	When LG = T Entire grid processed if all =-1
NGONOFF	Number of gridded receptor rows provided to identify specific gridded receptors to process	0	Y	
BTZONE	Base time zone for the CALPUFF simulation	6	n/a	
MFRH	Particle growth curve f(RH) for hygroscopic species	2	Y	FLAG (2000) f(RH) tabulation. Note: not used
RHMAX	Maximum relative humidity (%) used in particle growth curve	-	N	Not used

Variable	Description	Value	Default	Comments
LVSO4 LVNO3 LVOC LVPMC LVPMF LVEC	Modeled species to be included in computing light extinction	T T F T T F	Y Y N Y Y N	
LVBK	Include BACKGROUND when ranking for TOP-N, TOP-50, and exceedence tables?	T	Y	
SPECPMC	Species name used for particulates in	PM10	N	
SPECPMF	MODEL.DAT file	PM25	N	
EEPMC EEPMF	Modeled particulate species	0.6 1.0	Y Y	
EEPMCBK	Background particulate species	0.6	Y	
EESO4 EENO3 EEOC EESOIL EEEC	Other species	3.0 3.0 4.0 1.0 10	Y Y Y Y Y	
LAVER	Background extinction computation	F	Y	
MVISBK	Method used for background light extinction	6	N	Compute extinction from speciated PM measurements. FLAG RH adjustment factor applied to observed and modeled sulfate and nitrate
RHFAC	Extinction coefficients for hygroscopic species (modeled and background). Monthly RH adjustment factors	-	n/a	See Table 4 in main protocol document
BKSO4 BKNO3 BKPMC BKOC BKSOIL BKEC	Monthly concentrations of ammonium sulfate, ammonium nitrate, coarse particulates, organic carbon, soil and elemental carbon to compute background extinction coefficients	-	n/a	See Table 5 in main protocol document
BEXTRAY	Extinction due to Rayleigh scattering (1/Mm)	10	Y	
IPRTU	Units for all output	3	N	micrograms/cubic meter
L24HR	Averaging time reported	T	n/a	
LTOPN	Visibility: Top “N” table for each averaging time selected.	F	Y	
NTOP	Number of ‘Top-N’ values at each receptor selected (NTOP must be <=4)	4	Y	
MDVIS	Output file with visibility change at each receptor?	0	Y	Create file of DAILY (24 hour) delta-deciview. Grid model run.

Appendix C – Class I Receptors in Lambert Conformal Coordinates

Bandelier, NM - Class 1 Area			
Receptor #	**Lambert Conformal X (km)**	**Lambert Conformal Y (km)**	**Height (m)**
1	-841.87434	-431.0576	1821
2	-841.12698	-431.13477	1828
3	-840.37962	-431.21187	1787
4	-839.63226	-431.2889	1828
5	-838.88488	-431.36586	1795
6	-838.1375	-431.44275	1757
7	-837.39012	-431.51958	1706
8	-836.64272	-431.59633	1767
9	-841.77969	-430.14134	1950
10	-841.03242	-430.2185	1895
11	-840.28514	-430.29559	1882
12	-839.53786	-430.37261	1767
13	-838.79057	-430.44956	1780
14	-838.04327	-430.52645	1706
15	-837.29597	-430.60327	1767
16	-836.54866	-430.68001	1692
17	-841.68504	-429.22509	1926
18	-840.93785	-429.30224	1883
19	-840.19066	-429.37932	1892
20	-839.44346	-429.45633	1849
21	-838.69626	-429.53328	1767
22	-837.94905	-429.61015	1798
23	-837.20183	-429.68696	1781
24	-836.4546	-429.7637	1737
25	-835.70737	-429.84037	1706
26	-834.96013	-429.91697	1767
27	-841.59039	-428.30884	1950
28	-840.84329	-428.38599	1890
29	-840.09618	-428.46306	1828
30	-839.34907	-428.54006	1858
31	-838.60194	-428.617	1835
32	-837.85482	-428.69387	1828
33	-837.10768	-428.77066	1828
34	-836.36054	-428.84739	1733
35	-835.61339	-428.92406	1860
36	-834.86623	-429.00065	1706
37	-834.11907	-429.07717	1809
38	-841.49574	-427.3926	2036
39	-840.74872	-427.46974	1969
40	-840.0017	-427.5468	1950
41	-839.25467	-427.6238	1895
42	-838.50763	-427.70072	1883
43	-837.76059	-427.77758	1832

44	-837.01354	-427.85437	1843
45	-836.26648	-427.93109	1743
46	-835.51941	-428.00775	1828
47	-834.77234	-428.08433	1887
48	-834.02526	-428.16085	1889
49	-833.27818	-428.2373	1637
50	-841.40109	-426.47637	2143
51	-840.65416	-426.5535	2072
52	-839.90722	-426.63055	1976
53	-839.16027	-426.70754	1903
54	-838.41332	-426.78446	1906
55	-837.66636	-426.86131	1883
56	-836.91939	-426.93809	1889
57	-836.17242	-427.0148	1767
58	-835.42544	-427.09144	1889
59	-834.67845	-427.16802	1886
60	-833.93145	-427.24453	1889
61	-833.18445	-427.32097	1676
62	-841.30645	-425.56015	2173
63	-840.5596	-425.63726	2086
64	-839.81274	-425.71431	2057
65	-839.06588	-425.79129	1933
66	-838.31901	-425.8682	1950
67	-837.57213	-425.94504	1925
68	-836.82525	-426.02181	1887
69	-836.07836	-426.09851	1823
70	-835.33146	-426.17515	1855
71	-834.58456	-426.25172	1863
72	-833.83765	-426.32822	1897
73	-833.09073	-426.40465	1890
74	-841.2118	-424.64392	2316
75	-840.46504	-424.72103	2187
76	-839.71826	-424.79807	2080
77	-838.97149	-424.87504	2072
78	-838.2247	-424.95194	2011
79	-837.47791	-425.02877	1950
80	-836.73111	-425.10554	1874
81	-835.9843	-425.18223	1939
82	-835.23749	-425.25886	1950
83	-834.49067	-425.33542	1902
84	-833.74384	-425.41191	1924
85	-832.99701	-425.48833	1891
86	-841.11715	-423.72771	2233
87	-840.37047	-423.80481	2097
88	-839.62379	-423.88184	2011
89	-838.87709	-423.9588	2133
90	-838.13039	-424.03569	2047
91	-837.38368	-424.11252	1932

92	-836.63697	-424.18927	1979
93	-835.89025	-424.26596	1951
94	-835.14352	-424.34258	1950
95	-834.39678	-424.41913	1950
96	-833.65004	-424.49561	1950
97	-841.02251	-422.8115	2194
98	-840.27591	-422.88859	2194
99	-839.52931	-422.96561	2150
100	-838.7827	-423.04256	2138
101	-838.03608	-423.11945	2105
102	-837.28946	-423.19626	2031
103	-836.54283	-423.27301	2011
104	-835.79619	-423.34969	2011
105	-835.04954	-423.4263	1958
106	-834.30289	-423.50284	1950
107	-840.92787	-421.8953	2314
108	-840.18135	-421.97238	2242
109	-839.43483	-422.04939	2088
110	-838.68831	-422.12634	2011
111	-837.94177	-422.20321	2067
112	-837.19523	-422.28002	2071
113	-836.44869	-422.35676	2026
114	-835.70213	-422.43343	2012
115	-840.83322	-420.97911	2268
116	-840.08679	-421.05618	2150
117	-839.34036	-421.13318	2154
118	-838.59392	-421.21012	2133
119	-837.84747	-421.28698	2118
120	-837.10101	-421.36378	2072
121	-836.35455	-421.44051	1950
122	-835.60808	-421.51717	2029
123	-840.73858	-420.06292	2280
124	-839.99223	-420.13998	2194
125	-839.24588	-420.21697	2082
126	-838.49953	-420.2939	2011
127	-837.75316	-420.37076	2052
128	-845.12135	-418.68297	2461
129	-844.37513	-418.76043	2316
130	-843.62891	-418.83783	2331
131	-842.88267	-418.91516	2360
132	-841.39019	-419.06961	2278
133	-840.64394	-419.14673	2133
134	-839.89768	-419.22379	2206
135	-839.15141	-419.30077	2194
136	-838.40514	-419.37769	2159
137	-845.77233	-417.68932	2438
138	-845.0262	-417.76684	2438
139	-844.28007	-417.8443	2534

140	-843.53393	-417.92169	2442
141	-842.78778	-417.99901	2442
142	-842.04163	-418.07626	2414
143	-841.29546	-418.15344	2316
144	-839.05694	-418.38458	2194
145	-842.69289	-417.08286	2502
146	-841.94682	-417.16011	2464
147	-841.20074	-417.23728	2341
Big Bend, TX - Class 1 Area			
Receptor #	**Lambert Conformal X (km)**	**Lambert Conformal Y (km)**	**Height (m)**
148	-605.80269	-1200.95437	631
149	-617.87799	-1197.32233	623
150	-615.42511	-1197.49197	640
151	-612.97219	-1197.66094	623
152	-610.51923	-1197.82924	612
153	-608.06622	-1197.99686	626
154	-605.61316	-1198.1638	676
155	-603.16005	-1198.33007	1014
156	-625.04067	-1194.0194	638
157	-620.13669	-1194.36195	640
158	-617.68463	-1194.53222	641
159	-615.23253	-1194.70181	641
160	-612.78038	-1194.87073	635
161	-610.32818	-1195.03897	640
162	-607.87593	-1195.20654	647
163	-605.42364	-1195.37343	912
164	-602.97131	-1195.53965	912
165	-600.51892	-1195.70519	624
166	-629.74728	-1190.88449	658
167	-627.29618	-1191.0574	668
168	-624.84503	-1191.22964	666
169	-622.39383	-1191.4012	640
170	-619.94258	-1191.57209	671
171	-617.49129	-1191.7423	679
172	-615.03995	-1191.91184	659
173	-612.58857	-1192.0807	671
174	-610.13714	-1192.24889	658
175	-607.68566	-1192.41641	689
176	-605.23414	-1192.58325	920
177	-602.78257	-1192.74941	701
178	-600.33096	-1192.91491	610
179	-597.8793	-1193.07972	567
180	-634.45064	-1187.7473	670
181	-632.0004	-1187.9215	703
182	-629.55011	-1188.09503	732
183	-627.09978	-1188.26789	715
184	-624.6494	-1188.44007	698

185	-622.19897	-1188.61158	701
186	-619.74849	-1188.78241	732
187	-617.29797	-1188.95257	731
188	-614.84739	-1189.12206	709
189	-612.39678	-1189.29087	708
190	-609.94611	-1189.45901	697
191	-607.4954	-1189.62647	727
192	-605.04465	-1189.79326	664
193	-602.59385	-1189.95937	619
194	-600.143	-1190.12481	610
195	-597.69211	-1190.28958	627
196	-636.70138	-1184.78331	640
197	-634.25195	-1184.95814	671
198	-631.80248	-1185.13229	755
199	-629.35296	-1185.30576	732
200	-626.90339	-1185.47857	792
201	-624.45378	-1185.65069	756
202	-622.00412	-1185.82215	1150
203	-619.55441	-1185.99293	1036
204	-617.10465	-1186.16303	813
205	-614.65485	-1186.33247	830
206	-612.205	-1186.50122	750
207	-609.7551	-1186.66931	732
208	-607.30516	-1186.83672	722
209	-604.85517	-1187.00345	670
210	-602.40514	-1187.16952	622
211	-599.95506	-1187.3349	624
212	-597.50493	-1187.49962	607
213	-595.05476	-1187.66366	574
214	-592.60455	-1187.82702	559
215	-638.95055	-1181.81896	657
216	-636.50194	-1181.9944	738
217	-634.05328	-1182.16917	751
218	-631.60458	-1182.34326	808
219	-629.15582	-1182.51668	886
220	-626.70702	-1182.68943	871
221	-624.25818	-1182.8615	914
222	-621.80928	-1183.0329	1219
223	-619.36034	-1183.20363	1048
224	-616.91135	-1183.37368	1148
225	-614.46231	-1183.54306	880
226	-612.01323	-1183.71177	823
227	-609.5641	-1183.8798	787
228	-607.11493	-1184.04716	889
229	-604.66571	-1184.21384	961
230	-602.21644	-1184.37985	666
231	-599.76713	-1184.54519	642
232	-597.31777	-1184.70985	623

233	-594.86837	-1184.87384	606
234	-592.41892	-1185.03715	575
235	-646.09359	-1178.50008	671
236	-641.19815	-1178.85422	683
237	-638.75035	-1179.03028	691
238	-636.30251	-1179.20567	732
239	-633.85462	-1179.38038	786
240	-631.40669	-1179.55442	830
241	-628.9587	-1179.72779	884
242	-626.51067	-1179.90048	910
243	-624.06259	-1180.0725	1211
244	-621.61446	-1180.24385	1470
245	-619.16628	-1180.41452	1205
246	-616.71806	-1180.58452	1218
247	-614.26979	-1180.75385	1067
248	-611.82148	-1180.9225	923
249	-609.37312	-1181.09048	851
250	-606.92471	-1181.25779	762
251	-604.47626	-1181.42442	734
252	-602.02776	-1181.59038	683
253	-599.57921	-1181.75566	676
254	-597.13062	-1181.92027	642
255	-594.68199	-1182.08421	611
256	-592.23331	-1182.24747	592
257	-589.78458	-1182.41006	556
258	-655.67833	-1174.99562	750
259	-653.2316	-1175.17567	980
260	-650.78482	-1175.35504	1046
261	-648.33799	-1175.53374	690
262	-645.89111	-1175.71176	692
263	-643.44418	-1175.88911	710
264	-640.9972	-1176.06579	699
265	-638.55017	-1176.2418	722
266	-636.1031	-1176.41713	851
267	-633.65598	-1176.59179	799
268	-631.20881	-1176.76577	850
269	-628.76159	-1176.93909	999
270	-626.31432	-1177.11173	1121
271	-623.86701	-1177.28369	1154
272	-621.41965	-1177.45498	1280
273	-618.97224	-1177.6256	1617
274	-616.52479	-1177.79555	1309
275	-614.07729	-1177.96482	1229
276	-611.62974	-1178.13342	994
277	-609.18214	-1178.30135	914
278	-606.7345	-1178.4686	859
279	-604.28682	-1178.63518	824
280	-601.83909	-1178.80109	764

281	-599.39131	-1178.96632	671
282	-596.94349	-1179.13088	640
283	-594.49562	-1179.29477	639
284	-592.04771	-1179.45798	610
285	-589.59975	-1179.62052	573
286	-660.36458	-1171.84572	716
287	-657.91871	-1172.02705	991
288	-655.4728	-1172.20771	1062
289	-653.02683	-1172.3877	986
290	-650.58082	-1172.56702	740
291	-648.13475	-1172.74566	706
292	-645.68864	-1172.92363	718
293	-643.24248	-1173.10093	729
294	-640.79627	-1173.27755	732
295	-638.35001	-1173.4535	731
296	-635.9037	-1173.62878	793
297	-633.45735	-1173.80338	850
298	-631.01094	-1173.97731	911
299	-628.56449	-1174.15057	1008
300	-626.11799	-1174.32316	1128
301	-623.67145	-1174.49507	1260
302	-621.22485	-1174.66631	1472
303	-618.77821	-1174.83687	1713
304	-616.33152	-1175.00677	1371
305	-613.88479	-1175.17599	1280
306	-611.43801	-1175.34453	1156
307	-608.99118	-1175.51241	1030
308	-606.54431	-1175.67961	942
309	-604.09739	-1175.84613	1002
310	-601.65043	-1176.01199	762
311	-599.20342	-1176.17717	690
312	-596.75636	-1176.34168	673
313	-594.30926	-1176.50551	640
314	-591.86212	-1176.66867	625
315	-589.41493	-1176.83116	611
316	-586.96769	-1176.99298	619
317	-584.52041	-1177.15412	570
318	-582.07309	-1177.31459	610
319	-660.15752	-1169.05811	945
320	-657.71242	-1169.23939	1086
321	-655.26728	-1169.41999	975
322	-652.82208	-1169.59993	796
323	-643.04079	-1170.31293	729
324	-640.59535	-1170.48949	759
325	-638.14986	-1170.66539	746
326	-635.70431	-1170.84061	800
327	-633.25873	-1171.01516	850
328	-630.81309	-1171.18904	909

329	-628.36741	-1171.36224	979
330	-625.92167	-1171.53477	1185
331	-623.47589	-1171.70663	1491
332	-621.03007	-1171.87782	1656
333	-618.5842	-1172.04833	1820
334	-616.13828	-1172.21817	1821
335	-613.69231	-1172.38734	1398
336	-611.2463	-1172.55583	1216
337	-608.80024	-1172.72365	1105
338	-606.35413	-1172.8908	977
339	-603.90798	-1173.05727	972
340	-601.46178	-1173.22308	802
341	-599.01554	-1173.3882	732
342	-596.56925	-1173.55266	714
343	-594.12292	-1173.71644	677
344	-591.67654	-1173.87955	633
345	-589.23012	-1174.04199	633
346	-586.78365	-1174.20376	823
347	-584.33714	-1174.36485	808
348	-581.89058	-1174.52527	663
349	-579.44398	-1174.68501	914
350	-576.99734	-1174.84408	897
351	-662.39476	-1166.0888	707
352	-640.39444	-1167.70163	788
353	-637.94972	-1167.87747	750
354	-635.50494	-1168.05263	823
355	-633.06012	-1168.22713	967
356	-630.61525	-1168.40095	924
357	-628.17033	-1168.5741	1199
358	-625.72537	-1168.74658	1165
359	-623.28036	-1168.91838	1202
360	-620.8353	-1169.08951	1871
361	-618.39019	-1169.25997	1959
362	-615.94504	-1169.42976	2198
363	-613.49984	-1169.59887	1609
364	-611.05459	-1169.76731	1720
365	-608.6093	-1169.93508	1310
366	-606.16396	-1170.10218	1111
367	-603.71858	-1170.2686	981
368	-601.27315	-1170.43435	873
369	-598.82767	-1170.59943	795
370	-596.38215	-1170.76383	757
371	-593.93659	-1170.92756	695
372	-591.49098	-1171.09062	637
373	-589.04532	-1171.25301	696
374	-586.59962	-1171.41472	757
375	-584.15387	-1171.57576	884
376	-581.70809	-1171.73613	708

377	-579.26225	-1171.89583	853
378	-640.19355	-1164.91394	761
379	-637.74959	-1165.08973	816
380	-635.30558	-1165.26484	822
381	-632.86153	-1165.43928	871
382	-630.41743	-1165.61305	1047
383	-627.97328	-1165.78614	1160
384	-625.52908	-1165.95857	1192
385	-623.08483	-1166.13032	1132
386	-620.64054	-1166.3014	1270
387	-618.1962	-1166.4718	1509
388	-615.75182	-1166.64153	1841
389	-613.30738	-1166.81059	1850
390	-610.8629	-1166.97898	1590
391	-608.41838	-1167.1467	1703
392	-605.97381	-1167.31374	1279
393	-603.52919	-1167.48011	998
394	-601.08453	-1167.64581	897
395	-598.63982	-1167.81084	866
396	-596.19507	-1167.97519	759
397	-593.75027	-1168.13887	677
398	-591.30542	-1168.30188	697
399	-588.86053	-1168.46421	746
400	-586.4156	-1168.62588	779
401	-583.97062	-1168.78687	1191
402	-581.5256	-1168.94718	945
403	-579.08054	-1169.10683	760
404	-635.10624	-1162.47723	823
405	-632.66295	-1162.65162	860
406	-630.21961	-1162.82533	915
407	-627.77623	-1162.99837	1053
408	-625.3328	-1163.17074	1060
409	-622.88932	-1163.34244	1089
410	-620.4458	-1163.51346	1170
411	-618.00222	-1163.68382	1430
412	-615.55861	-1163.8535	1648
413	-613.11494	-1164.0225	1397
414	-610.67123	-1164.19084	1514
415	-608.22747	-1164.3585	1292
416	-605.78367	-1164.52549	1071
417	-603.33982	-1164.69181	983
418	-600.89592	-1164.85746	909
419	-598.45198	-1165.02243	877
420	-596.00799	-1165.18673	760
421	-593.56396	-1165.35036	697
422	-591.11988	-1165.51332	772
423	-588.67576	-1165.6756	821
424	-586.2316	-1165.83721	943

425	-583.78739	-1165.99815	1271
426	-581.34313	-1166.15842	1067
427	-578.89883	-1166.31802	792
428	-634.9069	-1159.68981	823
429	-632.46438	-1159.86414	895
430	-630.02181	-1160.0378	886
431	-627.5792	-1160.21079	977
432	-625.13653	-1160.3831	985
433	-622.69382	-1160.55475	1044
434	-620.25107	-1160.72572	1064
435	-617.80826	-1160.89602	1188
436	-615.36541	-1161.06564	1218
437	-612.92251	-1161.2346	1242
438	-610.47956	-1161.40288	1185
439	-608.03657	-1161.57049	1120
440	-605.59354	-1161.73743	1048
441	-603.15045	-1161.90369	974
442	-600.70732	-1162.06929	944
443	-598.26415	-1162.23421	853
444	-595.82093	-1162.39846	764
445	-593.37767	-1162.56204	877
446	-590.93436	-1162.72494	914
447	-588.491	-1162.88718	1068
448	-586.0476	-1163.04874	1113
449	-583.60416	-1163.20963	1067
450	-581.16067	-1163.36985	1035
451	-578.71714	-1163.52939	857
452	-576.27357	-1163.68826	733
453	-629.82403	-1157.25046	905
454	-627.38218	-1157.42339	945
455	-624.94028	-1157.59565	961
456	-622.49834	-1157.76724	1031
457	-620.05635	-1157.93816	1057
458	-617.61431	-1158.1084	1107
459	-615.17222	-1158.27797	1112
460	-612.73009	-1158.44688	1128
461	-610.28791	-1158.61511	1098
462	-607.84569	-1158.78266	1039
463	-605.40342	-1158.94955	997
464	-602.9611	-1159.11576	975
465	-600.51874	-1159.28131	916
466	-598.07633	-1159.44618	853
467	-595.63388	-1159.61037	767
468	-593.19138	-1159.7739	898
469	-590.74884	-1159.93676	876
470	-588.30625	-1160.09894	1005
471	-585.86362	-1160.26045	1278
472	-583.42095	-1160.42129	1108

473	-580.97823	-1160.58145	1208
474	-578.53546	-1160.74095	780
475	-576.09265	-1160.89977	711
476	-573.6498	-1161.05792	519
477	-629.62626	-1154.4633	1278
478	-627.18517	-1154.63617	954
479	-624.74404	-1154.80838	1080
480	-622.30287	-1154.97992	1037
481	-619.86164	-1155.15078	1193
482	-617.42037	-1155.32097	1124
483	-614.97905	-1155.49049	1055
484	-612.53769	-1155.65934	1056
485	-610.09628	-1155.82752	1032
486	-607.65482	-1155.99502	1004
487	-605.21331	-1156.16185	936
488	-602.77177	-1156.32802	924
489	-600.33017	-1156.49351	869
490	-597.88853	-1156.65833	792
491	-595.44684	-1156.82247	823
492	-593.00511	-1156.98595	903
493	-590.56334	-1157.14875	942
494	-588.12152	-1157.31088	1281
495	-585.67965	-1157.47234	1397
496	-583.23775	-1157.63313	1208
497	-580.79579	-1157.79325	1008
498	-578.3538	-1157.95269	835
499	-575.91175	-1158.11146	767
500	-626.98818	-1151.84914	1104
501	-624.54782	-1152.02129	1092
502	-622.10741	-1152.19278	1006
503	-619.66695	-1152.36359	1003
504	-617.22644	-1152.53372	1014
505	-614.78589	-1152.70319	1029
506	-612.34529	-1152.87199	1003
507	-609.90465	-1153.04011	989
508	-607.46396	-1153.20756	968
509	-605.02322	-1153.37434	914
510	-602.58244	-1153.54045	882
511	-600.14161	-1153.70589	847
512	-597.70074	-1153.87066	806
513	-595.25982	-1154.03475	906
514	-592.81886	-1154.19818	1027
515	-590.37785	-1154.36093	1003
516	-587.9368	-1154.52301	1532
517	-585.4957	-1154.68442	1431
518	-583.05456	-1154.84516	1205
519	-580.61337	-1155.00522	1025
520	-614.59275	-1149.91607	945

521	-612.15291	-1150.08482	959
522	-609.71304	-1150.25289	946
523	-607.27311	-1150.42029	897
524	-604.83314	-1150.58702	868
525	-602.39313	-1150.75307	850
526	-599.95307	-1150.91846	829
527	-597.51296	-1151.08317	845
528	-595.07281	-1151.24722	887
529	-592.63261	-1151.41059	951
530	-590.19237	-1151.57329	1032
531	-587.75208	-1151.73532	1272
532	-585.31175	-1151.89668	1574
533	-614.39961	-1147.12914	980
534	-611.96055	-1147.29783	981
535	-609.52144	-1147.46585	997
536	-607.08228	-1147.6332	1036
537	-604.64308	-1147.79987	953
538	-602.20383	-1147.96588	869
539	-599.76453	-1148.13121	848
540	-597.32519	-1148.29587	864
541	-594.88581	-1148.45987	914
542	-592.44638	-1148.62319	975
543	-590.0069	-1148.78584	1072
544	-587.56738	-1148.94782	1265
545	-609.32985	-1144.67899	1111
546	-606.89146	-1144.84629	1268
547	-604.45302	-1145.01291	997
548	-602.01454	-1145.17886	915
549	-599.57601	-1145.34414	874
550	-597.13744	-1145.50876	911
551	-594.69882	-1145.6727	967
552	-592.26016	-1145.83597	992
553	-589.82145	-1145.99857	1093
554	-587.3827	-1146.16049	1432
555	-609.13827	-1141.89231	1334
556	-606.70065	-1142.05956	1194
557	-604.26298	-1142.22613	1061
558	-601.82526	-1142.39203	908
559	-599.3875	-1142.55726	875
560	-596.9497	-1142.72182	907
561	-594.51185	-1142.88571	975
562	-592.07395	-1143.04893	1037
563	-589.63601	-1143.21147	1129
564	-587.19802	-1143.37335	1359
565	-616.257	-1138.60023	944
566	-613.82029	-1138.76943	1067
567	-611.38352	-1138.93796	1478
568	-608.94671	-1139.10582	1526

569	-606.50985	-1139.27301	1075
570	-604.07295	-1139.43953	956
571	-601.636	-1139.60538	874
572	-599.19901	-1139.77056	854
573	-596.76197	-1139.93506	904
574	-594.32488	-1140.0989	975
575	-591.88775	-1140.26207	1040
576	-589.45058	-1140.42457	1097
577	-616.06315	-1135.81407	912
578	-613.6272	-1135.98322	941
579	-611.1912	-1136.1517	938
580	-608.75516	-1136.31951	976
581	-606.31907	-1136.48664	913
582	-603.88293	-1136.65311	854
583	-601.44675	-1136.81891	834
584	-599.01052	-1136.98403	835
585	-596.57425	-1137.14849	1008
586	-594.13793	-1137.31228	1006
587	-591.70157	-1137.47539	946
588	-615.86932	-1133.0281	929
589	-613.43413	-1133.1972	879
590	-610.9989	-1133.36562	852
591	-608.56362	-1133.53337	846
592	-606.1283	-1133.70046	823
593	-603.69293	-1133.86687	810
594	-601.25751	-1134.03262	800
595	-598.82205	-1134.19769	814
596	-596.38654	-1134.3621	965
597	-593.95099	-1134.52583	957
598	-591.5154	-1134.6889	916
599	-618.10986	-1130.0726	966
600	-615.67549	-1130.24231	1034
601	-613.24107	-1130.41135	1007
602	-610.80661	-1130.57972	864
603	-608.3721	-1130.74742	846
604	-605.93754	-1130.91445	835
605	-603.50293	-1131.08081	826
606	-601.06829	-1131.24651	808
607	-598.63359	-1131.41153	777
608	-596.19885	-1131.57588	867
609	-593.76407	-1131.73957	851
610	-591.32924	-1131.90258	805
611	-613.04803	-1127.62568	914
612	-610.61433	-1127.794	877
613	-608.18058	-1127.96165	860
614	-605.74679	-1128.12863	854
615	-603.31295	-1128.29494	853
616	-600.87907	-1128.46058	803

617	-598.44514	-1128.62555	792
618	-596.01117	-1128.78985	884
619	-612.85499	-1124.84019	907
620	-610.42206	-1125.00846	889
621	-607.98908	-1125.17605	884
622	-605.55606	-1125.34298	858
623	-600.68987	-1125.67482	1007
624	-612.66197	-1122.05488	923
625	-610.22981	-1122.22309	914
626	-607.79759	-1122.39064	912
627	-600.50068	-1122.88925	856
Bosque del Apache, NM - Class 1 Area			
Receptor #	**Lambert Conformal X (km)**	**Lambert Conformal Y (km)**	**Height (m)**
628	-913.92142	-647.80433	1480
629	-913.15419	-647.8881	1480
630	-912.38696	-647.9718	1478
631	-913.82117	-646.88655	1434
632	-913.05402	-646.97032	1466
633	-912.28687	-647.05401	1475
634	-914.48797	-645.88496	1405
635	-913.72092	-645.96879	1420
636	-912.95386	-646.05254	1483
637	-912.18679	-646.13623	1490
638	-911.41971	-646.21984	1507
639	-913.62066	-645.05104	1408
640	-912.85369	-645.13478	1440
641	-912.0867	-645.21846	1525
642	-911.31971	-645.30206	1574
643	-912.75352	-644.21703	1447
644	-911.98662	-644.3007	1478
645	-911.21972	-644.38429	1613
646	-910.4528	-644.46782	1572
647	-912.65336	-643.29929	1417
648	-911.88654	-643.38295	1477
649	-911.11972	-643.46654	1506
650	-910.35289	-643.55005	1540
651	-909.58605	-643.6335	1498
652	-911.78646	-642.46521	1426
653	-911.01972	-642.54879	1460
654	-910.25298	-642.6323	1483
655	-909.48622	-642.71573	1488
656	-910.91973	-641.63105	1426
657	-910.15307	-641.71455	1440
658	-909.3864	-641.79798	1468
659	-908.61972	-641.88134	1468
660	-910.81974	-640.71333	1411
661	-910.05316	-640.79682	1452

662	-909.28657	-640.88023	1472
663	-908.51998	-640.96358	1482
664	-917.61785	-639.04113	1433
665	-916.85142	-639.12524	1420
666	-910.71974	-639.79561	1397
667	-909.95325	-639.87909	1441
668	-909.18675	-639.9625	1466
669	-908.42024	-640.04584	1477
670	-907.65372	-640.12911	1474
671	-917.5171	-638.12351	1456
672	-916.75076	-638.20761	1439
673	-915.98441	-638.29165	1431
674	-909.85334	-638.96138	1425
675	-909.08693	-639.04478	1437
676	-908.3205	-639.12811	1444
677	-907.55407	-639.21137	1442
678	-906.78763	-639.29456	1449
679	-918.1826	-637.12173	1478
680	-917.41635	-637.2059	1468
681	-916.65009	-637.28999	1455
682	-915.88383	-637.37402	1441
683	-909.75344	-638.04367	1387
684	-908.98711	-638.12707	1400
685	-908.22076	-638.21039	1420
686	-907.45442	-638.29364	1439
687	-906.68806	-638.37682	1445
688	-918.84793	-636.11992	1509
689	-918.08177	-636.20414	1497
690	-917.31561	-636.2883	1487
691	-916.54943	-636.37238	1476
692	-915.78325	-636.4564	1452
693	-915.01706	-636.54034	1437
694	-908.88728	-637.20936	1382
695	-908.12103	-637.29268	1409
696	-907.35476	-637.37592	1448
697	-906.58849	-637.45909	1453
698	-905.82221	-637.54219	1456
699	-919.51308	-635.11806	1541
700	-918.74701	-635.20235	1530
701	-917.98094	-635.28656	1517
702	-917.21486	-635.37071	1510
703	-916.44877	-635.45478	1484
704	-915.68268	-635.53879	1461
705	-914.91657	-635.62272	1448
706	-908.78747	-636.29167	1381
707	-908.02129	-636.37498	1393
708	-907.25511	-636.45821	1428
709	-906.48892	-636.54137	1456

710	-905.72273	-636.62446	1461
711	-919.41208	-634.20051	1572
712	-918.6461	-634.28479	1563
713	-917.88011	-634.36899	1549
714	-917.11412	-634.45313	1533
715	-916.34811	-634.5372	1505
716	-915.5821	-634.62119	1468
717	-914.81608	-634.70512	1449
718	-907.92156	-635.45729	1388
719	-907.15546	-635.54051	1420
720	-906.38936	-635.62366	1453
721	-905.62325	-635.70674	1471
722	-904.85713	-635.78976	1471
723	-919.31109	-633.28297	1598
724	-918.54519	-633.36724	1601
725	-917.77929	-633.45143	1583
726	-917.01338	-633.53556	1533
727	-916.24746	-633.61962	1512
728	-915.48153	-633.7036	1477
729	-914.71559	-633.78752	1460
730	-907.05582	-634.62282	1408
731	-906.2898	-634.70596	1447
732	-905.52377	-634.78904	1469
733	-904.75773	-634.87204	1475
734	-903.99169	-634.95497	1467
735	-918.44428	-632.4497	1636
736	-917.67846	-632.53389	1599
737	-916.91263	-632.618	1559
738	-916.1468	-632.70205	1524
739	-915.38095	-632.78603	1499
740	-906.95617	-633.70514	1404
741	-906.19023	-633.78828	1436
742	-905.42429	-633.87134	1471
743	-904.65834	-633.95434	1469
744	-903.89238	-634.03726	1466
745	-918.34337	-631.53217	1686
746	-917.57764	-631.61635	1611
747	-916.81189	-631.70046	1587
748	-916.04614	-631.78449	1551
749	-906.85652	-632.78748	1404
750	-906.09067	-632.8706	1439
751	-905.32481	-632.95366	1467
752	-904.55894	-633.03664	1468
753	-903.79307	-633.11956	1467
754	-903.02719	-633.2024	1466
755	-917.47682	-630.69882	1706
756	-916.71116	-630.78292	1645
757	-915.94549	-630.86695	1558

758	-905.99111	-631.95294	1433
759	-905.22533	-632.03598	1475
760	-904.45955	-632.11896	1469
761	-903.69376	-632.20186	1468
762	-902.92796	-632.2847	1473
763	-902.16216	-632.36747	1477
764	-917.37599	-629.7813	1850
765	-916.61042	-629.86539	1683
766	-915.84483	-629.94941	1621
767	-915.07924	-630.03336	1498
768	-905.89155	-631.03528	1416
769	-905.12586	-631.11832	1460
770	-904.36016	-631.20129	1466
771	-903.59446	-631.28418	1462
772	-902.82874	-631.36701	1474
773	-902.06302	-631.44977	1489
774	-916.50968	-628.94788	1677
775	-915.74418	-629.03189	1555
776	-914.97868	-629.11583	1512
777	-905.79199	-630.11764	1412
778	-905.02639	-630.20067	1451
779	-904.26077	-630.28362	1471
780	-903.49515	-630.36651	1471
781	-902.72952	-630.44933	1476
782	-901.96388	-630.53208	1490
783	-901.19824	-630.61475	1504
784	-916.40895	-628.03037	1596
785	-915.64353	-628.11437	1553
786	-914.87811	-628.19831	1524
787	-914.11268	-628.28217	1493
788	-905.69243	-629.2	1417
789	-904.92691	-629.28302	1452
790	-904.16138	-629.36597	1467
791	-903.39584	-629.44885	1490
792	-902.6303	-629.53166	1490
793	-901.86475	-629.6144	1499
794	-901.09919	-629.69706	1511
795	-900.33362	-629.77966	1523
Breton, LA - Class 1 Area			
Receptor #	**Lambert Conformal X (km)**	**Lambert Conformal Y (km)**	**Height (m)**
796	779.31288	-1115.4658	0
797	781.57909	-1113.39681	0
798	782.30688	-1112.39801	0
799	783.0345	-1111.39917	0
800	787.2311	-1103.55154	0
801	790.86048	-1098.55584	0
802	791.41942	-1095.70324	0

803	792.86927	-1093.70471	1
804	792.7859	-1092.77812	1
805	793.42703	-1090.85229	1
806	793.34358	-1089.92577	1
807	793.98429	-1088.00001	1
808	793.90076	-1087.07356	1
809	793.81724	-1086.14712	1
810	793.73372	-1085.2207	1
811	793.6502	-1084.29431	0
812	793.56668	-1083.36793	0
813	793.39964	-1081.51523	0
814	794.20664	-1081.44244	1
815	794.12304	-1080.51613	1
816	793.23262	-1079.66261	0
817	794.03944	-1079.58983	1
818	793.14911	-1078.73633	0
819	793.95584	-1078.66356	1
820	793.0656	-1077.81007	1
821	792.98209	-1076.88383	1
822	792.09209	-1076.03028	0
823	792.89858	-1075.9576	1
824	792.00867	-1075.10406	0
825	792.81508	-1075.0314	1
826	791.92526	-1074.17787	0
827	791.84184	-1073.2517	0
828	791.75843	-1072.32554	1
829	790.86894	-1071.47196	0
830	790.78562	-1070.54584	0
831	789.89639	-1069.69221	0
832	789.81315	-1068.76611	1
833	788.92417	-1067.91242	0
834	788.03535	-1067.05866	0
835	787.1467	-1066.20482	0
Caney Creek, AR - Class 1 Area			
Receptor #	**Lambert Conformal X (km)**	**Lambert Conformal Y (km)**	**Height (m)**
836	270.32693	-617.5203	365
837	271.09137	-617.49548	365
838	271.85582	-617.47059	368
839	268.7683	-616.64782	411
840	269.53267	-616.62314	462
841	270.29703	-616.59839	431
842	271.06139	-616.57357	518
843	271.82575	-616.54868	487
844	272.59011	-616.52371	396
845	265.68142	-615.82393	518
846	266.44571	-615.79953	523
847	267.21	-615.77506	548

848	267.97429	-615.75052	579
849	268.73857	-615.72591	547
850	269.50285	-615.70123	538
851	270.26713	-615.67648	640
852	271.03141	-615.65166	608
853	260.30253	-615.07082	335
854	261.06675	-615.04692	431
855	261.83097	-615.02294	457
856	262.59519	-614.9989	414
857	263.3594	-614.97478	426
858	264.12361	-614.95059	426
859	264.88783	-614.92634	388
860	265.65203	-614.90201	388
861	266.41624	-614.87762	365
862	267.18044	-614.85315	386
863	267.94465	-614.82862	396
864	268.70885	-614.80401	426
865	269.47304	-614.77933	446
866	270.23724	-614.75459	441
867	271.00143	-614.72977	457
868	271.76562	-614.70488	465
869	272.52981	-614.67993	442
870	273.294	-614.6549	426
871	260.27373	-614.1489	304
872	261.03787	-614.125	304
873	261.802	-614.10102	319
874	262.56614	-614.07698	334
875	263.33027	-614.05287	370
876	264.0944	-614.02869	405
877	264.85852	-614.00443	409
878	265.62265	-613.98011	450
879	266.38677	-613.95572	518
880	267.15089	-613.93125	609
881	267.91501	-613.90672	534
882	268.67912	-613.88212	517
883	269.44323	-613.85744	575
884	270.20734	-613.8327	600
885	270.97145	-613.80789	609
886	271.73556	-613.783	609
887	272.49966	-613.75805	561
888	261.00899	-613.20309	335
889	261.77304	-613.17912	432
890	262.53709	-613.15508	487
891	263.30113	-613.13097	499
892	264.06518	-613.10679	514
893	264.82922	-613.08254	442
894	265.59326	-613.05822	439
895	266.3573	-613.03383	395

896	267.12133	-613.00936	400
897	267.88536	-612.98483	426
898	268.64939	-612.96023	487
899	269.41342	-612.93556	548
900	270.17745	-612.91082	548
901	270.94147	-612.88601	548
902	271.70549	-612.86113	535
903	261.74407	-612.25722	304
904	262.50804	-612.23318	334
905	263.272	-612.20907	396
906	264.03596	-612.1849	457
907	264.79992	-612.16065	457
908	265.56387	-612.13633	426
909	266.32782	-612.11194	411
910	267.09178	-612.08749	406
911	267.85572	-612.06296	396
912	268.61967	-612.03836	401
913	269.38361	-612.01369	397
914	261.71511	-611.33533	322
915	262.47899	-611.3113	334
Great Sand Dunes, CO - Class 1 Area			
Receptor #	**Lambert Conformal X (km)**	**Lambert Conformal Y (km)**	**Height (m)**
916	-752.32924	-218.84047	2355
917	-751.60135	-218.90943	2368
918	-750.87345	-218.97832	2376
919	-750.14555	-219.04714	2388
920	-749.41764	-219.1159	2404
921	-752.24242	-217.92444	2355
922	-751.51461	-217.99339	2367
923	-750.7868	-218.06227	2376
924	-750.05898	-218.13108	2386
925	-749.33115	-218.19983	2403
926	-748.60332	-218.26851	2407
927	-753.61102	-216.87032	2340
928	-752.88331	-216.9394	2345
929	-752.1556	-217.0084	2354
930	-751.42787	-217.07734	2365
931	-750.70014	-217.14622	2376
932	-749.97241	-217.21503	2381
933	-749.24466	-217.28377	2407
934	-748.51692	-217.35244	2407
935	-747.78916	-217.42105	2422
936	-753.52403	-215.95431	2350
937	-752.79641	-216.02337	2353
938	-752.06877	-216.09237	2360
939	-751.34113	-216.16131	2367
940	-750.61349	-216.23017	2376

941	-749.88584	-216.29897	2385
942	-749.15818	-216.3677	2398
943	-748.43051	-216.43637	2407
944	-747.70284	-216.50497	2418
945	-746.97517	-216.5735	2444
946	-753.43704	-215.03829	2355
947	-752.7095	-215.10735	2362
948	-751.98195	-215.17634	2371
949	-751.2544	-215.24527	2373
950	-750.52683	-215.31413	2390
951	-749.79927	-215.38292	2404
952	-749.07169	-215.45164	2405
953	-748.34411	-215.5203	2406
954	-747.61653	-215.58889	2415
955	-746.88893	-215.65742	2435
956	-746.16133	-215.72588	2456
957	-754.0775	-214.05317	2350
958	-753.35005	-214.12228	2357
959	-752.62259	-214.19133	2367
960	-751.89513	-214.26032	2383
961	-751.16766	-214.32923	2399
962	-750.44018	-214.39808	2419
963	-749.7127	-214.46687	2453
964	-748.98521	-214.53559	2493
965	-748.25771	-214.60424	2481
966	-747.53021	-214.67282	2436
967	-746.8027	-214.74134	2455
968	-753.99043	-213.13717	2350
969	-753.26306	-213.20627	2359
970	-752.53569	-213.27532	2369
971	-751.80831	-213.34429	2386
972	-751.08092	-213.4132	2407
973	-750.35353	-213.48204	2449
974	-749.62613	-213.55082	2499
975	-748.89872	-213.61953	2499
976	-748.17131	-213.68817	2559
977	-747.44389	-213.75675	2621
978	-746.71646	-213.82525	2554
979	-745.98903	-213.8937	2493
980	-753.90336	-212.22117	2352
981	-753.17607	-212.29027	2361
982	-752.44878	-212.3593	2372
983	-751.72148	-212.42827	2396
984	-750.99418	-212.49717	2421
985	-750.26687	-212.566	2490
986	-749.53956	-212.63477	2526
987	-748.81223	-212.70347	2559
988	-748.08491	-212.77211	2560

989	-747.35757	-212.84067	2560
990	-746.63023	-212.90918	2582
991	-745.90288	-212.97761	2590
992	-745.17553	-213.04598	2499
993	-753.81628	-211.30517	2353
994	-753.08908	-211.37426	2363
995	-752.36188	-211.44329	2374
996	-751.63466	-211.51225	2396
997	-750.90744	-211.58114	2451
998	-750.18022	-211.64997	2499
999	-749.45299	-211.71873	2532
1000	-748.72575	-211.78742	2559
1001	-747.9985	-211.85605	2558
1002	-747.27125	-211.92461	2559
1003	-746.544	-211.9931	2559
1004	-745.81673	-212.06152	2561
1005	-745.08946	-212.12988	2560
1006	-753.72921	-210.38917	2359
1007	-753.00209	-210.45826	2370
1008	-752.27497	-210.52728	2385
1009	-751.54784	-210.59623	2412
1010	-750.82071	-210.66511	2455
1011	-750.09357	-210.73393	2501
1012	-749.36642	-210.80268	2544
1013	-748.63926	-210.87137	2556
1014	-747.9121	-210.93999	2558
1015	-747.18494	-211.00854	2569
1016	-746.45776	-211.07702	2620
1017	-745.73058	-211.14544	2656
1018	-745.0034	-211.21379	2636
1019	-753.64214	-209.47318	2367
1020	-752.9151	-209.54226	2380
1021	-752.18806	-209.61127	2398
1022	-751.46102	-209.68021	2422
1023	-750.73397	-209.74909	2473
1024	-750.00691	-209.8179	2499
1025	-749.27985	-209.88664	2554
1026	-748.55278	-209.95532	2557
1027	-747.8257	-210.02393	2560
1028	-747.09862	-210.09247	2617
1029	-746.37153	-210.16095	2620
1030	-745.64444	-210.22936	2620
1031	-744.91733	-210.2977	2620
1032	-755.73587	-208.34958	2348
1033	-755.00894	-208.41885	2354
1034	-754.282	-208.48805	2362
1035	-753.55506	-208.55719	2375
1036	-752.82811	-208.62626	2396

1037	-752.10116	-208.69526	2410
1038	-751.3742	-208.76419	2426
1039	-750.64723	-208.83306	2456
1040	-749.92026	-208.90187	2497
1041	-749.19328	-208.9706	2559
1042	-748.46629	-209.03927	2560
1043	-747.7393	-209.10787	2621
1044	-747.0123	-209.17641	2619
1045	-746.2853	-209.24488	2627
1046	-745.55829	-209.31328	2620
1047	-744.83127	-209.38162	2617
1048	-756.37538	-207.36428	2346
1049	-755.64854	-207.43361	2352
1050	-754.9217	-207.50287	2362
1051	-754.19485	-207.57207	2371
1052	-753.46799	-207.6412	2377
1053	-752.74113	-207.71026	2413
1054	-752.01425	-207.77925	2424
1055	-751.28738	-207.84818	2436
1056	-750.5605	-207.91704	2474
1057	-749.83361	-207.98583	2525
1058	-749.10671	-208.05456	2584
1059	-748.37981	-208.12322	2592
1060	-747.6529	-208.19182	2618
1061	-746.92599	-208.26035	2620
1062	-746.19906	-208.32881	2620
1063	-745.47214	-208.3972	2620
1064	-744.7452	-208.46553	2619
1065	-756.28797	-206.44833	2346
1066	-755.56122	-206.51765	2352
1067	-754.83446	-206.5869	2362
1068	-754.10769	-206.65609	2371
1069	-753.38092	-206.72521	2385
1070	-752.65414	-206.79426	2436
1071	-751.92735	-206.86325	2438
1072	-751.20056	-206.93217	2474
1073	-750.47376	-207.00102	2517
1074	-749.74695	-207.06981	2566
1075	-749.02014	-207.13853	2621
1076	-748.29332	-207.20718	2621
1077	-747.5665	-207.27577	2636
1078	-746.83967	-207.34429	2653
1079	-746.11283	-207.41274	2651
1080	-745.38599	-207.48113	2631
1081	-744.65914	-207.54945	2630
1082	-743.93228	-207.6177	2669
1083	-751.84045	-205.94724	2499
1084	-751.11374	-206.01615	2499

1085	-750.38702	-206.085	2542
1086	-749.6603	-206.15378	2610
1087	-748.93357	-206.22249	2627
1088	-748.20684	-206.29114	2656
1089	-747.4801	-206.35971	2680
1090	-746.75335	-206.42823	2688
1091	-746.0266	-206.49667	2743
1092	-745.29984	-206.56505	2731
1093	-744.57307	-206.63336	2746
1094	-743.8463	-206.70161	2741
1095	-751.75354	-205.03124	2485
1096	-751.02692	-205.10014	2501
1097	-750.30029	-205.16898	2560
1098	-749.57365	-205.23775	2607
1099	-748.847	-205.30646	2621
1100	-748.12035	-205.37509	2670
1101	-747.3937	-205.44366	2778
1102	-746.66704	-205.51217	2845
1103	-745.94037	-205.58061	2849
1104	-745.21369	-205.64898	2861
1105	-744.48701	-205.71728	3016
1106	-743.76032	-205.78552	3026
1107	-751.66664	-204.11524	2431
1108	-750.9401	-204.18414	2456
1109	-750.21355	-204.25297	2489
1110	-749.487	-204.32173	2541
Guadalupe Mountains, TX - Class 1 Area			
Receptor #	**Lambert Conformal X (km)**	**Lambert Conformal Y (km)**	**Height (m)**
1111	-749.03029	-871.16545	1359
1112	-747.45487	-871.30268	1341
1113	-745.87941	-871.43962	1341
1114	-744.30394	-871.57627	1338
1115	-748.86939	-869.32021	1360
1116	-747.2943	-869.45741	1377
1117	-745.71919	-869.59432	1379
1118	-744.14405	-869.73094	1402
1119	-756.58186	-866.78483	1104
1120	-755.00724	-866.92345	1125
1121	-753.43259	-867.06178	1139
1122	-750.28322	-867.33756	1375
1123	-748.70849	-867.47502	1315
1124	-747.13374	-867.6122	1424
1125	-745.55896	-867.74908	1540
1126	-743.98416	-867.88567	1608
1127	-759.56777	-864.66182	1098
1128	-757.99354	-864.80099	1097
1129	-756.41928	-864.93986	1109

1130	-754.84499	-865.07845	1127
1131	-753.27068	-865.21674	1166
1132	-751.69635	-865.35475	1207
1133	-750.12198	-865.49247	1272
1134	-748.5476	-865.6299	1349
1135	-746.97318	-865.76704	1463
1136	-745.39875	-865.9039	1706
1137	-743.82429	-866.04046	2061
1138	-742.2498	-866.17674	1829
1139	-759.40452	-862.81697	1100
1140	-757.83062	-862.9561	1099
1141	-756.2567	-863.09495	1111
1142	-754.68275	-863.2335	1126
1143	-753.10878	-863.37177	1158
1144	-751.53478	-863.50975	1217
1145	-749.96076	-863.64744	1265
1146	-748.38671	-863.78484	1351
1147	-746.81263	-863.92195	1677
1148	-745.23854	-864.05878	2095
1149	-743.66441	-864.19531	2271
1150	-742.09026	-864.33156	2043
1151	-740.51609	-864.46752	1755
1152	-738.94189	-864.60319	1677
1153	-737.36767	-864.73857	1616
1154	-759.24126	-860.97217	1097
1155	-757.66771	-861.11128	1101
1156	-756.09412	-861.25009	1115
1157	-754.52051	-861.38862	1125
1158	-752.94688	-861.52686	1150
1159	-751.37322	-861.6648	1205
1160	-749.79954	-861.80246	1279
1161	-748.22583	-861.93984	1534
1162	-746.65209	-862.07692	2028
1163	-745.07833	-862.21371	2369
1164	-743.50454	-862.35022	2084
1165	-741.93073	-862.48644	2264
1166	-740.3569	-862.62237	2141
1167	-738.78304	-862.75801	1755
1168	-737.20915	-862.89336	1645
1169	-759.07802	-859.12744	1097
1170	-757.5048	-859.26651	1098
1171	-755.93155	-859.4053	1114
1172	-754.35828	-859.54379	1128
1173	-752.78499	-859.682	1162
1174	-751.21167	-859.81992	1227
1175	-749.63832	-859.95755	1352
1176	-748.06495	-860.09489	1799
1177	-746.49155	-860.23195	2061

1178	-744.91813	-860.36871	2508
1179	-743.34468	-860.50519	2334
1180	-741.77121	-860.64138	2390
1181	-740.19771	-860.77728	2316
1182	-738.62419	-860.91289	2251
1183	-737.05064	-861.04821	1789
1184	-757.3419	-857.4218	1099
1185	-755.76899	-857.56056	1109
1186	-754.19606	-857.69903	1127
1187	-752.6231	-857.8372	1158
1188	-751.05012	-857.97509	1218
1189	-749.47711	-858.1127	1433
1190	-747.90408	-858.25001	1666
1191	-746.33102	-858.38703	2202
1192	-744.75793	-858.52377	2438
1193	-743.18482	-858.66022	2255
1194	-741.61169	-858.79637	2236
1195	-740.03853	-858.93224	2438
1196	-738.46535	-859.06783	2239
1197	-736.89214	-859.20312	2211
1198	-735.31891	-859.33812	1688
1199	-732.17237	-859.60727	1516
1200	-752.46122	-855.99247	1143
1201	-750.88857	-856.13033	1206
1202	-749.3159	-856.2679	1604
1203	-747.74321	-856.40518	1947
1204	-746.17049	-856.54218	2080
1205	-744.59774	-856.67888	2084
1206	-743.02497	-856.8153	2126
1207	-741.45218	-856.95143	2308
1208	-739.87936	-857.08727	2013
1209	-738.30651	-857.22282	1897
1210	-736.73364	-857.35809	1800
1211	-735.16075	-857.49306	1732
1212	-752.29934	-854.14779	1144
1213	-750.72703	-854.28562	1269
1214	-749.1547	-854.42316	1709
1215	-747.58235	-854.56042	1951
1216	-746.00996	-854.69738	1961
1217	-744.43756	-854.83406	1950
1218	-742.86512	-854.97045	2180
1219	-741.29267	-855.10655	2069
1220	-739.72019	-855.24236	2265
1221	-738.14768	-855.37788	2251
1222	-736.57515	-855.51312	1791
1223	-735.00259	-855.64806	1851
1224	-733.43001	-855.78272	1575
1225	-752.13747	-852.30317	1188

1226	-750.5655	-852.44097	1407
1227	-748.99351	-852.57848	1932
1228	-747.42149	-852.71571	1888
1229	-745.84944	-852.85264	1914
1230	-744.27738	-852.98929	1919
1231	-742.70528	-853.12565	2095
1232	-741.13316	-853.26172	1921
1233	-739.56102	-853.3975	2164
1234	-737.98885	-853.533	1959
1235	-736.41666	-853.6682	1841
1236	-734.84444	-853.80312	2063
1237	-733.2722	-853.93775	1927
Hercules-Glades, MO - Class 1 Area			
Receptor #	**Lambert Conformal X (km)**	**Lambert Conformal Y (km)**	**Height (m)**
1238	360.71704	-361.40504	274
1239	361.45799	-361.37193	299
1240	362.19895	-361.33875	328
1241	362.93991	-361.3055	365
1242	359.19422	-360.55145	250
1243	359.9351	-360.51848	278
1244	360.67598	-360.48544	335
1245	361.41686	-360.45233	307
1246	362.15773	-360.41915	345
1247	358.41254	-359.66474	261
1248	359.15334	-359.63184	271
1249	359.89413	-359.59887	274
1250	360.63493	-359.56583	331
1251	361.37572	-359.53273	327
1252	362.11651	-359.49955	304
1253	362.85729	-359.46631	335
1254	363.59807	-359.433	312
1255	364.33885	-359.39963	340
1256	365.07963	-359.36618	361
1257	365.8204	-359.33267	382
1258	358.37174	-358.74513	274
1259	359.11245	-358.71223	274
1260	359.85316	-358.67926	335
1261	360.59387	-358.64623	294
1262	361.33458	-358.61313	304
1263	362.07528	-358.57996	279
1264	362.81599	-358.54672	304
1265	363.55668	-358.51342	318
1266	364.29738	-358.48005	335
1267	365.03807	-358.44661	347
1268	365.77876	-358.4131	340
1269	359.8122	-357.75966	247
1270	360.55282	-357.72663	271

1271	361.29344	-357.69354	275
1272	362.03406	-357.66037	274
1273	362.77468	-357.62714	277
1274	363.51529	-357.59384	304
1275	364.2559	-357.56047	330
1276	364.99651	-357.52703	357
1277	365.73711	-357.49353	384
1278	366.47772	-357.45995	372
1279	357.54959	-356.93874	274
1280	358.29014	-356.90592	293
1281	359.03068	-356.87303	272
1282	359.77123	-356.84007	271
1283	360.51177	-356.80704	274
1284	361.25231	-356.77395	327
1285	361.99284	-356.74079	316
1286	362.73337	-356.70756	304
1287	363.4739	-356.67426	354
1288	364.21443	-356.6409	346
1289	364.95495	-356.60746	335
1290	365.69547	-356.57396	344
1291	366.43599	-356.54039	364
1292	358.24934	-355.98632	243
1293	358.9898	-355.95343	335
1294	359.73026	-355.92048	324
1295	360.47072	-355.88745	335
1296	361.21117	-355.85436	341
1297	361.95162	-355.82121	333
1298	362.69207	-355.78798	306
1299	363.43251	-355.75469	304
1300	364.17295	-355.72133	365
1301	364.91339	-355.6879	304
1302	365.65383	-355.6544	309
1303	366.39426	-355.62083	307
1304	358.20854	-355.06672	270
1305	358.94891	-355.03384	274
1306	359.68929	-355.00089	301
1307	360.42966	-354.96787	274
1308	361.17003	-354.93478	274
1309	361.9104	-354.90163	312
1310	362.65076	-354.86841	274
1311	363.39112	-354.83512	322
1312	364.13148	-354.80176	304
1313	364.87183	-354.76834	275
1314	365.61219	-354.73484	304
1315	366.35253	-354.70128	290
1316	363.34973	-353.91555	249
1317	364.09001	-353.8822	274
Mingo, MO - Class 1 Area			

Receptor #	Lambert Conformal X (km)	Lambert Conformal Y (km)	Height (m)
1318	598.20175	-314.99601	106
1319	599.67516	-314.88616	102
1320	598.87003	-314.02328	105
1321	599.60664	-313.96833	102
1322	600.34325	-313.91331	102
1323	598.8016	-313.10544	114
1324	599.53813	-313.0505	104
1325	600.27466	-312.99548	102
1326	601.01118	-312.9404	102
1327	601.74769	-312.88526	102
1328	602.4842	-312.83004	103
1329	599.46962	-312.13267	108
1330	600.20606	-312.07766	105
1331	600.94249	-312.02259	102
1332	601.67892	-311.96745	102
1333	602.41535	-311.91224	102
1334	603.15177	-311.85696	102
1335	603.88819	-311.80162	102
1336	604.6246	-311.74621	102
1337	600.13746	-311.15985	121
1338	600.87381	-311.10478	104
1339	601.61016	-311.04965	102
1340	602.3465	-310.99444	102
1341	603.08284	-310.93917	102
1342	603.81917	-310.88383	102
1343	604.55549	-310.82843	102
1344	600.80513	-310.18697	121
1345	601.5414	-310.13184	105
1346	602.27765	-310.07665	102
1347	603.01391	-310.02138	102
1348	603.75015	-309.96605	102
1349	604.48639	-309.91065	101
1350	601.47263	-309.21405	117
1351	602.20881	-309.15886	101
1352	602.94497	-309.1036	101
1353	603.68114	-309.04828	102
1354	604.41729	-308.99288	101
1355	602.13996	-308.24107	106
1356	602.87604	-308.18582	102
1357	603.61212	-308.1305	102
1358	604.34819	-308.07511	102
1359	602.80711	-307.26804	103
1360	603.5431	-307.21273	102
1361	604.27909	-307.15735	102
1362	603.47409	-306.29496	103
1363	604.20999	-306.23959	102
1364	604.14089	-305.32183	103

Salt Creek, NM - Class 1 Area			
Receptor #	**Lambert Conformal X (km)**	**Lambert Conformal Y (km)**	**Height (m)**
1365	-689.10932	-682.2837	1094
1366	-688.33893	-682.34686	1090
1367	-687.56854	-682.40994	1093
1368	-686.79814	-682.47296	1097
1369	-686.02773	-682.53591	1097
1370	-685.25732	-682.59878	1086
1371	-684.4869	-682.66158	1081
1372	-689.03383	-681.3634	1093
1373	-688.26353	-681.42655	1087
1374	-687.49322	-681.48963	1090
1375	-686.7229	-681.55264	1086
1376	-685.95258	-681.61558	1088
1377	-685.18225	-681.67845	1083
1378	-684.41192	-681.74125	1078
1379	-691.26897	-680.25326	1096
1380	-690.49877	-680.31662	1097
1381	-689.72856	-680.3799	1097
1382	-688.95835	-680.44312	1097
1383	-688.18813	-680.50626	1090
1384	-687.4179	-680.56933	1085
1385	-686.64767	-680.63234	1081
1386	-685.87743	-680.69527	1083
1387	-685.10719	-680.75813	1084
1388	-684.33694	-680.82092	1076
1389	-690.42311	-679.39636	1085
1390	-689.65299	-679.45963	1089
1391	-688.88286	-679.52284	1086
1392	-688.11272	-679.58598	1085
1393	-687.34258	-679.64904	1086
1394	-686.57243	-679.71204	1084
1395	-685.80228	-679.77496	1081
1396	-685.03212	-679.83782	1081
1397	-684.26195	-679.9006	1081
1398	-683.49178	-679.96331	1084
1399	-689.57742	-678.53938	1085
1400	-688.80737	-678.60258	1083
1401	-688.03732	-678.66571	1081
1402	-687.26726	-678.72877	1080
1403	-686.4972	-678.79176	1079
1404	-685.72713	-678.85467	1083
1405	-684.95705	-678.91752	1088
1406	-684.18697	-678.9803	1090
1407	-683.41689	-679.043	1091
1408	-689.50185	-677.61913	1085
1409	-688.73189	-677.68233	1085

1410	-687.96192	-677.74545	1084
1411	-687.19195	-677.8085	1089
1412	-686.42197	-677.87148	1092
1413	-685.65198	-677.93439	1095
1414	-684.88199	-677.99723	1096
1415	-684.11199	-678.06	1097
1416	-683.34199	-678.1227	1090
1417	-688.6564	-676.76208	1088
1418	-687.88652	-676.8252	1086
1419	-687.11663	-676.88824	1095
Upper Buffalo, AR - Class 1 Area			
Receptor #	**Lambert Conformal X (km)**	**Lambert Conformal Y (km)**	**Height (m)**
1420	319.10485	-455.30356	555
1421	319.85442	-455.27426	589
1422	322.10312	-455.18596	563
1423	319.06892	-454.38322	549
1424	319.81841	-454.35392	487
1425	320.56789	-454.32456	487
1426	321.31737	-454.29513	490
1427	319.03299	-453.46288	650
1428	319.7824	-453.43359	563
1429	320.5318	-453.40423	540
1430	321.28119	-453.3748	502
1431	322.03059	-453.3453	526
1432	323.52937	-453.2861	534
1433	324.27875	-453.2564	563
1434	318.99707	-452.54254	548
1435	319.74638	-452.51326	628
1436	320.4957	-452.4839	623
1437	321.24501	-452.45448	579
1438	321.99432	-452.42498	469
1439	322.74363	-452.39542	457
1440	323.49293	-452.36579	573
1441	324.24223	-452.33609	605
1442	324.99153	-452.30632	588
1443	318.96114	-451.62222	608
1444	319.71037	-451.59293	660
1445	320.4596	-451.56358	598
1446	321.20883	-451.53416	599
1447	321.95805	-451.50467	639
1448	322.70728	-451.47511	457
1449	323.4565	-451.44548	568
1450	318.92521	-450.7019	730
1451	319.67436	-450.67262	681
1452	320.4235	-450.64327	640
1453	321.17265	-450.61385	625
1454	321.92179	-450.58436	426

1455	322.67093	-450.55481	555
1456	323.42006	-450.52518	612
1457	318.14021	-449.81079	667
1458	318.88928	-449.78158	580
1459	319.63834	-449.75231	656
1460	320.38741	-449.72296	640
1461	321.13647	-449.69354	487
1462	321.88552	-449.66406	457
1463	322.63458	-449.63451	654
1464	323.38363	-449.60489	548
1465	324.13267	-449.5752	622
1466	324.88172	-449.54544	683
1467	318.10437	-448.89048	579
1468	318.85335	-448.86127	554
1469	319.60233	-448.832	609
1470	320.35131	-448.80266	622
1471	321.10028	-448.77325	427
1472	321.84926	-448.74377	555
1473	322.59823	-448.71422	502
1474	323.34719	-448.6846	639
1475	324.09616	-448.65491	580
1476	324.84512	-448.62516	639
1477	319.56632	-447.9117	548
1478	320.31521	-447.88236	548
1479	321.0641	-447.85295	438
1480	321.81299	-447.82348	579
1481	323.31076	-447.76432	620
1482	321.02792	-446.93267	579
1483	321.77673	-446.90319	426
1484	322.52553	-446.87365	611
1485	319.4943	-446.07112	604
1486	320.24302	-446.04179	548
1487	320.99174	-446.01239	488
1488	321.74046	-445.98292	402
1489	322.48918	-445.95338	579
1490	323.23789	-445.92377	573
1491	323.9866	-445.8941	609
White Mountain, NM - Class 1 Area			
Receptor #	**Lambert Conformal X (km)**	**Lambert Conformal Y (km)**	**Height (m)**
1492	-824.18581	-689.59593	2092
1493	-823.41475	-689.67147	2278
1494	-822.64368	-689.74695	2295
1495	-821.87261	-689.82235	2423
1496	-821.10153	-689.89768	2689
1497	-820.33044	-689.97294	2891
1498	-819.55934	-690.04813	3162
1499	-818.78824	-690.12325	3281

1500	-824.09571	-688.67671	2009
1501	-823.32473	-688.75224	2120
1502	-822.55375	-688.82771	2216
1503	-821.78276	-688.9031	2370
1504	-821.01176	-688.97843	2592
1505	-820.24076	-689.05368	2743
1506	-819.46975	-689.12886	2940
1507	-818.69873	-689.20397	3291
1508	-814.84354	-689.57847	3210
1509	-814.07248	-689.65316	2865
1510	-813.30141	-689.72777	2865
1511	-824.00561	-687.7575	2092
1512	-823.23471	-687.83302	2370
1513	-822.46381	-687.90848	2453
1514	-821.69291	-687.98387	2438
1515	-820.922	-688.05918	2610
1516	-820.15108	-688.13443	2696
1517	-819.38015	-688.2096	3017
1518	-818.60922	-688.28471	3070
1519	-817.83828	-688.35974	2865
1520	-817.06733	-688.4347	2760
1521	-814.75445	-688.65916	3055
1522	-813.98347	-688.73384	2849
1523	-813.21249	-688.80845	2636
1524	-810.8995	-689.03185	2539
1525	-807.04439	-689.40277	2382
1526	-823.9155	-686.8383	2131
1527	-823.1447	-686.91382	2370
1528	-822.37388	-686.98927	2521
1529	-821.60306	-687.06464	2743
1530	-820.83223	-687.13995	2682
1531	-820.0614	-687.21519	2771
1532	-819.29056	-687.29035	2987
1533	-818.51971	-687.36545	3166
1534	-817.74885	-687.44047	3078
1535	-816.97799	-687.51543	2865
1536	-816.20712	-687.59031	2787
1537	-815.43624	-687.66512	2575
1538	-814.66536	-687.73986	2743
1539	-813.89447	-687.81454	2865
1540	-813.12357	-687.88914	2926
1541	-812.35267	-687.96367	2621
1542	-811.58176	-688.03812	2621
1543	-810.81084	-688.11251	2682
1544	-807.7271	-688.40936	2439
1545	-806.95615	-688.48339	2468
1546	-806.18519	-688.55736	2311
1547	-823.82541	-685.91911	2188

1548	-823.05468	-685.99462	2255
1549	-822.28395	-686.07006	2316
1550	-821.51321	-686.14543	2562
1551	-820.74247	-686.22073	2818
1552	-819.97172	-686.29596	3007
1553	-819.20096	-686.37112	2995
1554	-818.4302	-686.4462	2790
1555	-817.65943	-686.52122	2865
1556	-816.88865	-686.59617	3039
1557	-816.11786	-686.67104	2946
1558	-815.34707	-686.74585	2729
1559	-814.57627	-686.82058	2499
1560	-813.80546	-686.89524	2523
1561	-813.03465	-686.96983	2579
1562	-812.26383	-687.04436	2804
1563	-811.493	-687.11881	2743
1564	-810.72217	-687.19319	2712
1565	-809.18048	-687.34173	2564
1566	-808.40963	-687.4159	2450
1567	-807.63877	-687.49	2316
1568	-806.8679	-687.56403	2438
1569	-806.09703	-687.63798	2374
1570	-823.73531	-684.99994	2171
1571	-822.96467	-685.07544	2323
1572	-822.19402	-685.15087	2391
1573	-821.42337	-685.22623	2649
1574	-820.65271	-685.30152	2741
1575	-819.88204	-685.37674	2804
1576	-819.11137	-685.45189	2800
1577	-818.34069	-685.52697	2621
1578	-817.57	-685.60198	2743
1579	-816.79931	-685.67692	2621
1580	-816.02861	-685.75178	2852
1581	-815.2579	-685.82658	2743
1582	-814.48718	-685.9013	2613
1583	-813.71646	-685.97596	2486
1584	-812.94573	-686.05054	2474
1585	-812.175	-686.12506	2580
1586	-811.40426	-686.1995	2575
1587	-810.63351	-686.27387	2583
1588	-809.86275	-686.34817	2613
1589	-809.09199	-686.4224	2490
1590	-808.32122	-686.49656	2456
1591	-807.55044	-686.57065	2338
1592	-806.77966	-686.64467	2256
1593	-806.00887	-686.71862	2290
1594	-805.23807	-686.7925	2274
1595	-823.64521	-684.08077	2323

1596	-822.87466	-684.15627	2408
1597	-822.10409	-684.23169	2477
1598	-821.33353	-684.30704	2712
1599	-820.56295	-684.38233	2753
1600	-819.79237	-684.45754	2672
1601	-819.02178	-684.53268	2621
1602	-818.25118	-684.60775	2560
1603	-817.48058	-684.68275	2691
1604	-811.31551	-685.2802	2426
1605	-810.54484	-685.35457	2424
1606	-809.77417	-685.42886	2394
1607	-809.00349	-685.50308	2314
1608	-808.23281	-685.57724	2255
1609	-807.46212	-685.65132	2325
1610	-806.69142	-685.72533	2267
1611	-805.92071	-685.79927	2182
1612	-823.55511	-683.16162	2349
1613	-822.78464	-683.2371	2332
1614	-822.01417	-683.31252	2492
1615	-821.24368	-683.38786	2686
1616	-820.47319	-683.46314	2728
1617	-819.70269	-683.53834	2640
1618	-818.93219	-683.61348	2560
1619	-818.16168	-683.68854	2680
1620	-817.39116	-683.76353	2560
1621	-816.62063	-683.83845	2560
1622	-823.46502	-682.24248	2128
1623	-822.69463	-682.31795	2377
1624	-821.92424	-682.39336	2316
1625	-821.15384	-682.4687	2499
1626	-820.38343	-682.54396	2713
1627	-819.61302	-682.61916	2690
1628	-818.8426	-682.69429	2605
1629	-818.07217	-682.76934	2505
1630	-817.30174	-682.84432	2509
1631	-816.5313	-682.91924	2407
1632	-815.76085	-682.99408	2440
1633	-822.60462	-681.39882	2203
1634	-821.83432	-681.47422	2364
1635	-821.064	-681.54954	2481
1636	-820.29368	-681.6248	2668
1637	-819.52335	-681.69999	2743
1638	-818.75301	-681.77511	2619
1639	-817.98267	-681.85015	2587
1640	-817.21232	-681.92513	2621
1641	-816.44196	-682.00003	2455
1642	-815.6716	-682.07487	2438
1643	-814.90123	-682.14963	2402

1644	-823.28483	-680.40423	2072
1645	-822.51462	-680.47969	2244
1646	-821.74439	-680.55508	2377
1647	-820.97416	-680.6304	2377
1648	-820.20392	-680.70565	2509
1649	-819.43368	-680.78083	2721
1650	-818.66342	-680.85594	2738
1651	-817.89317	-680.93098	2737
1652	-817.1229	-681.00594	2560
1653	-816.35263	-681.08084	2712
1654	-815.58235	-681.15566	2647
1655	-823.19474	-679.48512	2018
1656	-822.42461	-679.56057	2099
1657	-821.65447	-679.63596	2324
1658	-820.88432	-679.71127	2461
1659	-820.11417	-679.78651	2621
1660	-819.34401	-679.86168	2576
1661	-818.57384	-679.93678	2766
1662	-817.80366	-680.01181	2671
1663	-817.03348	-680.08677	2787
1664	-816.26329	-680.16166	2743
1665	-815.4931	-680.23647	2603
1666	-814.7229	-680.31122	2621
1667	-821.56455	-678.71684	2163
1668	-820.79448	-678.79215	2190
1669	-820.02441	-678.86738	2377
1670	-819.25434	-678.94254	2458
1671	-818.48425	-679.01764	2494
1672	-817.71416	-679.09266	2621
1673	-816.94407	-679.16761	2682
1674	-816.17396	-679.24249	2976
1675	-815.40385	-679.3173	2804
1676	-814.63373	-679.39204	2683
1677	-821.47463	-677.79774	2054
1678	-820.70465	-677.87304	2127
1679	-819.93466	-677.94826	2191
1680	-819.16467	-678.02342	2255
1681	-818.39467	-678.0985	2314
1682	-817.62466	-678.17351	2377
1683	-816.85465	-678.24846	2560
1684	-816.08463	-678.32333	2789
1685	-815.3146	-678.39813	2651
1686	-814.54457	-678.47286	2560
1687	-813.77453	-678.54752	2495
1688	-813.00448	-678.62211	2560
1689	-812.23443	-678.69663	2504
1690	-821.38471	-676.87865	2011
1691	-820.61481	-676.95394	2065

1692	-819.075	-677.1043	2194
1693	-818.30509	-677.17938	2499
1694	-817.53517	-677.25438	2560
1695	-816.76524	-677.32932	2688
1696	-815.9953	-677.40418	2758
1697	-815.22536	-677.47897	2804
1698	-814.45541	-677.5537	2705
1699	-813.68545	-677.62835	2682
1700	-812.91549	-677.70293	2529
1701	-812.14552	-677.77744	2438
1702	-811.37554	-677.85188	2290
1703	-818.21551	-676.26027	2265
1704	-817.44567	-676.33526	2384
1705	-816.67582	-676.41019	2621
1706	-815.90597	-676.48504	2560
1707	-815.13612	-676.55983	2537
1708	-814.36625	-676.63454	2560
1709	-813.59638	-676.70919	2476
1710	-812.8265	-676.78376	2526
1711	-812.05661	-676.85826	2438
1712	-811.28672	-676.93269	2392
1713	-818.12593	-675.34117	2152
1714	-817.35617	-675.41615	2329
1715	-816.58641	-675.49107	2497
1716	-815.81665	-675.56592	2461
1717	-815.04687	-675.6407	2456
1718	-814.27709	-675.7154	2402
1719	-813.5073	-675.79004	2549
1720	-812.73751	-675.8646	2305
1721	-811.96771	-675.9391	2255
1722	-811.1979	-676.01352	2318
1723	-818.03635	-674.42208	2139
1724	-817.26668	-674.49706	2311
1725	-816.497	-674.57197	2443
1726	-815.72732	-674.64681	2435
1727	-814.95763	-674.72157	2358
1728	-814.18793	-674.79627	2316
1729	-812.64852	-674.94546	2242
1730	-811.8788	-675.01994	2255
1731	-811.10908	-675.09436	2169
1732	-810.33935	-675.1687	2158
1733	-817.94677	-673.503	2049
1734	-817.17718	-673.57797	2219
1735	-816.40759	-673.65287	2329
1736	-815.63799	-673.7277	2377
1737	-814.86839	-673.80246	2499
1738	-814.09878	-673.87715	2417
1739	-813.32916	-673.95177	2457

1740	-812.55953	-674.02632	2431
1741	-811.7899	-674.1008	2545
1742	-811.02026	-674.17521	2413
1743	-810.25061	-674.24954	2143
1744	-816.31818	-672.73379	2112
1745	-815.54867	-672.80861	2151
1746	-814.77915	-672.88336	2256
1747	-814.00962	-672.95805	2194
1748	-813.24009	-673.03266	2211
1749	-812.47054	-673.1072	2438
1750	-811.701	-673.18167	2499
1751	-810.93144	-673.25607	2345
1752	-810.16188	-673.33039	2115
1753	-816.22878	-671.81472	2009
1754	-815.45935	-671.88953	2072
1755	-814.68991	-671.96428	2136
1756	-813.92047	-672.03895	2133
1757	-813.15102	-672.11355	2123
1758	-812.38156	-672.18808	2228
1759	-811.61209	-672.26255	2195
1760	-810.84262	-672.33694	2135
1761	-810.07315	-672.41126	2055
Wheeler Peak, NM - Class 1 Area			
Receptor #	**Lambert Conformal X (km)**	**Lambert Conformal Y (km)**	**Height (m)**
1762	-755.5249	-347.03242	3315
1763	-754.78525	-347.10167	3613
1764	-754.0456	-347.17086	3698
1765	-753.30594	-347.23997	3657
1766	-752.56628	-347.30901	3474
1767	-760.6158	-345.62926	2725
1768	-759.87628	-345.69898	2766
1769	-759.13676	-345.76863	2939
1770	-758.39723	-345.83821	2841
1771	-757.65769	-345.90772	3155
1772	-756.91815	-345.97716	3505
1773	-756.1786	-346.04654	3342
1774	-755.43904	-346.11585	3384
1775	-754.69948	-346.18509	3484
1776	-753.95991	-346.25427	3302
1777	-753.22034	-346.32337	3249
1778	-752.48076	-346.39241	3461
1779	-751.74117	-346.46138	3840
1780	-751.00157	-346.53028	3615
1781	-750.26197	-346.59912	3515
1782	-749.52237	-346.66788	3797
1783	-759.05048	-344.8521	2664
1784	-758.31104	-344.92167	2864

1785	-757.57158	-344.99117	3133
1786	-756.83213	-345.06061	3383
1787	-756.09266	-345.12998	3304
1788	-755.35319	-345.19928	3363
1789	-754.61371	-345.26851	3299
1790	-753.87422	-345.33768	3060
1791	-753.13473	-345.40678	3300
1792	-752.39524	-345.47581	3520
1793	-751.65573	-345.54477	3701
1794	-750.91622	-345.61366	3467
1795	-750.17671	-345.68249	3459
1796	-749.43718	-345.75125	3845
1797	-748.69765	-345.81994	3718
1798	-747.95812	-345.88856	3621
1799	-747.21858	-345.95712	3499
1800	-746.47903	-346.02561	3657
1801	-745.73947	-346.09403	3656
1802	-758.22485	-344.00513	2735
1803	-757.48548	-344.07463	2926
1804	-756.7461	-344.14406	2996
1805	-756.00672	-344.21342	2962
1806	-755.26733	-344.28272	3115
1807	-754.52794	-344.35194	2961
1808	-753.78854	-344.4211	3014
1809	-753.04913	-344.49019	3352
1810	-752.30972	-344.55921	3610
1811	-750.83087	-344.69705	3368
1812	-750.09144	-344.76587	3476
1813	-749.352	-344.83462	3801
1814	-748.61255	-344.9033	3769
1815	-747.8731	-344.97192	3658
1816	-747.13365	-345.04047	3443
1817	-746.39418	-345.10895	3314
1818	-745.65471	-345.17736	3509
1819	-744.91524	-345.2457	3448
1820	-744.17575	-345.31398	3352
1821	-743.43626	-345.38219	3351
1822	-757.39937	-343.15809	2637
1823	-756.66008	-343.22752	2641
1824	-755.92078	-343.29687	2712
1825	-755.18148	-343.36615	2794
1826	-754.44217	-343.43537	2950
1827	-753.70285	-343.50452	3194
1828	-752.96353	-343.5736	3438
1829	-752.2242	-343.64262	3597
1830	-749.26682	-343.918	3718
1831	-748.52746	-343.98667	3749
1832	-747.78809	-344.05528	3547

1833	-747.04872	-344.12382	3318
1834	-745.56995	-344.2607	3376
1835	-744.83056	-344.32903	3370
1836	-744.09116	-344.3973	3292
1837	-743.35175	-344.4655	3407
1838	-755.83484	-342.38032	2906
1839	-755.09562	-342.4496	3220
1840	-754.3564	-342.51881	3305
1841	-753.61716	-342.58795	3329
1842	-752.87792	-342.65702	3535
1843	-749.18163	-343.00138	3571
1844	-748.44236	-343.07005	3726
1845	-747.70307	-343.13865	3484
1846	-746.96379	-343.20718	3291
1847	-745.48519	-343.34404	3381
1848	-744.74588	-343.41237	3385
1849	-744.00656	-343.48063	3291
1850	-743.26724	-343.54882	3325
1851	-755.00977	-341.53305	2867
1852	-754.27063	-341.60225	2987
1853	-753.53148	-341.67138	3096
1854	-749.09645	-342.08476	3448
1855	-748.35726	-342.15342	3512
1856	-745.40043	-342.42739	3332
1857	-744.6612	-342.49571	3297
1858	-743.92197	-342.56396	3230
1859	-745.31566	-341.51074	3150
1860	-744.57652	-341.57905	3352
1861	-743.83738	-341.64729	3238
1862	-745.2309	-340.59409	3230
1863	-745.14614	-339.67745	3248
1864	-745.06138	-338.76081	3263
1865	-744.3225	-338.8291	3233
1866	-744.97662	-337.84418	3009
1867	-744.23782	-337.91247	3159
1868	-743.49901	-337.98068	3230
1869	-744.89186	-336.92756	2871
1870	-742.67569	-337.13218	3204
Wichita Mountains, OK - Class 1 Area			
Receptor #	**Lambert Conformal X (km)**	**Lambert Conformal Y (km)**	**Height (m)**
1871	-160.27878	-583.46638	454
1872	-159.51745	-583.48105	486
1873	-158.75612	-583.49564	487
1874	-157.9948	-583.51016	478
1875	-157.23347	-583.52462	518
1876	-156.47214	-583.539	518
1877	-161.78346	-582.51498	510

1878	-161.02222	-582.52978	493
1879	-160.26098	-582.54452	488
1880	-159.49974	-582.55918	615
1881	-158.7385	-582.57377	522
1882	-157.97725	-582.58829	494
1883	-157.21601	-582.60274	609
1884	-156.45476	-582.61712	518
1885	-162.52664	-581.57826	487
1886	-161.76549	-581.59313	518
1887	-161.00434	-581.60793	609
1888	-160.24318	-581.62266	554
1889	-159.48203	-581.63732	578
1890	-158.72087	-581.65191	557
1891	-157.95971	-581.66643	571
1892	-157.19855	-581.68088	670
1893	-156.43739	-581.69526	518
1894	-160.98646	-580.68608	518
1895	-160.22539	-580.70081	548
1896	-159.46431	-580.71547	548
1897	-158.70324	-580.73005	518
1898	-160.96858	-579.76424	517
1899	-160.20759	-579.77897	579
1900	-159.4466	-579.79362	613
1901	-158.68561	-579.80821	548
1902	-157.92462	-579.82273	523
1903	-161.71159	-578.82762	542
1904	-160.95069	-578.84241	545
1905	-160.18979	-578.85713	552
1906	-153.29051	-576.22103	579
1907	-156.31577	-575.24243	609
1908	-155.5552	-575.25673	654
1909	-154.79463	-575.27096	621
1910	-154.03405	-575.28512	629
1911	-153.27348	-575.29921	579
1912	-152.5129	-575.31323	560
1913	-157.05888	-574.30627	615
1914	-156.2984	-574.32064	641
1915	-155.53791	-574.33493	640
1916	-154.77742	-574.34916	662
1917	-154.01693	-574.36332	618
1918	-153.25644	-574.37741	630
1919	-152.49595	-574.39143	534
1920	-157.04143	-573.38448	606
1921	-156.28103	-573.39885	566
1922	-155.52062	-573.41314	633
1923	-154.76022	-573.42737	670
1924	-153.99981	-573.44153	609
1925	-153.23941	-573.45561	579

1926	-152.479	-573.46963	535
1927	-155.50333	-572.49136	548
1928	-154.74302	-572.50559	518
1929	-153.9827	-572.51974	506
Carlsbad Cavern, NM - Class 1 Area			
Receptor #	**Lambert Conformal X (km)**	**Lambert Conformal Y (km)**	**Height (m)**
1930	-725.728	-849.005	1557
1931	-725.65	-848.083	1798
1932	-724.864	-848.149	1526
1933	-725.572	-847.16	1818
1934	-724.786	-847.227	1831
1935	-725.494	-846.238	1792
1936	-724.708	-846.304	1524
1937	-723.923	-846.371	1584
1938	-723.137	-846.437	1528
1939	-722.352	-846.503	1455
1940	-725.415	-845.315	1757
1941	-724.63	-845.382	1825
1942	-723.845	-845.448	1524
1943	-723.059	-845.515	1714
1944	-722.274	-845.581	1617
1945	-725.337	-844.393	1734
1946	-724.552	-844.459	1666
1947	-723.767	-844.526	1768
1948	-722.982	-844.592	1881
1949	-722.196	-844.658	1829
1950	-721.411	-844.725	1751
1951	-720.626	-844.791	1622
1952	-719.84	-844.857	1544
1953	-719.055	-844.923	1455
1954	-718.27	-844.989	1404
1955	-717.484	-845.055	1350
1956	-723.689	-843.604	1829
1957	-722.904	-843.67	1723
1958	-722.118	-843.736	1721
1959	-721.333	-843.802	1825
1960	-720.548	-843.868	1815
1961	-719.763	-843.934	1739
1962	-718.978	-844	1716
1963	-718.192	-844.066	1721
1964	-717.407	-844.132	1553
1965	-716.622	-844.198	1376
1966	-715.837	-844.264	1341
1967	-715.051	-844.329	1301
1968	-714.266	-844.395	1268
1969	-713.481	-844.46	1249
1970	-723.611	-842.681	1890

1971	-722.826	-842.747	1797
1972	-722.041	-842.814	1705
1973	-721.256	-842.88	1682
1974	-720.47	-842.946	1617
1975	-719.685	-843.012	1737
1976	-718.9	-843.078	1806
1977	-718.115	-843.144	1809
1978	-717.33	-843.21	1708
1979	-716.545	-843.275	1587
1980	-715.76	-843.341	1465
1981	-714.974	-843.407	1339
1982	-714.189	-843.472	1279
1983	-713.404	-843.538	1263
1984	-723.533	-841.759	1866
1985	-722.748	-841.825	1805
1986	-721.963	-841.891	1890
1987	-721.178	-841.958	1685
1988	-720.393	-842.024	1589
1989	-719.608	-842.09	1524
1990	-718.823	-842.156	1527
1991	-718.038	-842.221	1589
1992	-717.253	-842.287	1562
1993	-716.468	-842.353	1684
1994	-715.682	-842.419	1545
1995	-714.897	-842.484	1526
1996	-714.112	-842.55	1335
1997	-713.327	-842.615	1299
1998	-723.455	-840.836	1847
1999	-722.67	-840.903	1885
2000	-721.885	-840.969	1755
2001	-721.1	-841.035	1666
2002	-720.315	-841.101	1707
2003	-719.53	-841.167	1707
2004	-718.745	-841.233	1554
2005	-717.96	-841.299	1463
2006	-717.175	-841.365	1668
2007	-716.39	-841.431	1404
2008	-715.605	-841.496	1459
2009	-714.82	-841.562	1353
2010	-714.035	-841.627	1393
2011	-713.25	-841.693	1566
2012	-712.465	-841.758	1367
2013	-721.807	-840.047	1890
2014	-721.022	-840.113	1832
2015	-720.238	-840.179	1829
2016	-719.453	-840.245	1753
2017	-718.668	-840.311	1755
2018	-717.883	-840.377	1653

2019	-717.098	-840.442	1829
2020	-716.313	-840.508	1648
2021	-715.528	-840.574	1630
2022	-714.743	-840.639	1400
2023	-713.958	-840.705	1611
2024	-713.174	-840.77	1671
2025	-712.389	-840.836	1527
2026	-711.604	-840.901	1405
2027	-710.819	-840.966	1263
2028	-710.034	-841.031	1220
2029	-721.73	-839.124	1889
2030	-720.945	-839.19	1788
2031	-720.16	-839.257	1890
2032	-719.375	-839.323	1864
2033	-718.59	-839.388	1781
2034	-717.806	-839.454	1823
2035	-717.021	-839.52	1828
2036	-716.236	-839.586	1627
2037	-715.451	-839.651	1447
2038	-714.666	-839.717	1405
2039	-713.882	-839.783	1646
2040	-713.097	-839.848	1584
2041	-712.312	-839.913	1645
2042	-711.527	-839.979	1433
2043	-710.742	-840.044	1343
2044	-709.957	-840.109	1258
2045	-709.172	-840.174	1219
2046	-721.652	-838.202	1776
2047	-720.867	-838.268	1770
2048	-720.082	-838.334	1809
2049	-719.298	-838.4	1754
2050	-718.513	-838.466	1825
2051	-717.728	-838.532	1840
2052	-716.944	-838.598	1739
2053	-716.159	-838.663	1708
2054	-715.374	-838.729	1522
2055	-714.589	-838.795	1675
2056	-713.805	-838.86	1637
2057	-713.02	-838.926	1624
2058	-712.235	-838.991	1515
2059	-711.45	-839.056	1583
2060	-710.666	-839.121	1529
2061	-709.881	-839.187	1455
2062	-709.096	-839.252	1282
2063	-708.311	-839.317	1213
2064	-707.526	-839.382	1199
2065	-706.742	-839.446	1204
2066	-721.574	-837.28	1811

2067	-720.789	-837.346	1805
2068	-720.005	-837.412	1646
2069	-719.22	-837.478	1704
2070	-718.436	-837.544	1768
2071	-717.651	-837.61	1827
2072	-716.866	-837.675	1702
2073	-716.082	-837.741	1623
2074	-715.297	-837.807	1724
2075	-714.512	-837.872	1768
2076	-713.728	-837.938	1707
2077	-712.943	-838.003	1647
2078	-712.158	-838.069	1585
2079	-711.374	-838.134	1485
2080	-710.589	-838.199	1463
2081	-709.804	-838.264	1521
2082	-709.02	-838.329	1367
2083	-708.235	-838.394	1334
2084	-707.45	-838.459	1240
2085	-706.665	-838.524	1217
2086	-705.881	-838.589	1194
2087	-705.096	-838.653	1159
2088	-721.496	-836.357	1740
2089	-720.712	-836.424	1655
2090	-719.927	-836.49	1733
2091	-719.143	-836.556	1684
2092	-718.358	-836.622	1709
2093	-717.574	-836.687	1590
2094	-716.789	-836.753	1583
2095	-716.004	-836.819	1704
2096	-715.22	-836.884	1715
2097	-714.435	-836.95	1661
2098	-713.651	-837.015	1598
2099	-712.866	-837.081	1535
2100	-712.082	-837.146	1546
2101	-711.297	-837.211	1440
2102	-710.512	-837.277	1343
2103	-709.728	-837.342	1320
2104	-708.943	-837.407	1280
2105	-708.159	-837.472	1402
2106	-707.374	-837.537	1402
2107	-706.589	-837.602	1378
2108	-705.805	-837.666	1298
2109	-705.02	-837.731	1219
2110	-704.235	-837.796	1209
2111	-703.451	-837.86	1173
2112	-702.666	-837.925	1149
2113	-701.881	-837.989	1134
2114	-701.097	-838.053	1128
2115	-700.312	-838.118	1121
2116	-699.527	-838.182	1111

2117	-715.143	-835.962	1550
2118	-714.358	-836.028	1598
2119	-713.574	-836.093	1610
2120	-712.789	-836.159	1567
2121	-712.005	-836.224	1571
2122	-711.22	-836.289	1461
2123	-710.436	-836.354	1460
2124	-709.651	-836.419	1341
2125	-708.867	-836.484	1400
2126	-708.082	-836.549	1373
2127	-707.298	-836.614	1375
2128	-706.513	-836.679	1402
2129	-705.729	-836.744	1401
2130	-704.944	-836.809	1376
2131	-704.159	-836.873	1341
2132	-703.375	-836.938	1341
2133	-702.59	-837.002	1276
2134	-701.806	-837.067	1250
2135	-701.021	-837.131	1218
2136	-700.237	-837.195	1156
2137	-699.452	-837.259	1138
2138	-698.667	-837.323	1133
2139	-697.883	-837.387	1119
2140	-697.098	-837.451	1118
2141	-713.497	-835.171	1443
2142	-712.712	-835.236	1524
2143	-711.928	-835.302	1495
2144	-711.144	-835.367	1463
2145	-710.359	-835.432	1406
2146	-709.575	-835.497	1402
2147	-708.79	-835.562	1402
2148	-708.006	-835.627	1402
2149	-707.221	-835.692	1377
2150	-706.437	-835.757	1341
2151	-705.652	-835.821	1341
2152	-704.868	-835.886	1341
2153	-704.084	-835.951	1341
2154	-703.299	-836.015	1339
2155	-702.515	-836.08	1339
2156	-701.73	-836.144	1285
2157	-700.946	-836.208	1280
2158	-700.161	-836.273	1280
2159	-699.377	-836.337	1280
2160	-698.592	-836.401	1219
2161	-697.808	-836.465	1211
2162	-697.023	-836.529	1158
2163	-709.498	-834.575	1447
2164	-708.714	-834.64	1442
2165	-707.93	-834.705	1424
2166	-707.145	-834.77	1402
2167	-706.361	-834.834	1400
2168	-705.576	-834.899	1348
2169	-704.792	-834.964	1341

2170	-704.008	-835.028	1292
2171	-703.223	-835.093	1280
2172	-702.439	-835.157	1280
2173	-701.654	-835.222	1248
2174	-700.87	-835.286	1219
2175	-700.086	-835.35	1219
2176	-699.301	-835.414	1242
2177	-698.517	-835.479	1219
2178	-697.732	-835.543	1148
2179	-696.948	-835.606	1152
2180	-696.163	-835.67	1219
2181	-700.794	-834.364	1281
2182	-700.01	-834.428	1305
2183	-699.226	-834.492	1236
2184	-698.441	-834.556	1230
2185	-697.657	-834.62	1229
Pecos, NM - Class 1 Area			
Receptor #	**Lambert Conformal X (km)**	**Lambert Conformal Y (km)**	**Height (m)**
2489	-792.445	-435.087	2592
2490	-792.267	-433.253	2743
2491	-790.772	-433.398	2817
2492	-759.368	-436.384	2426
2493	-757.873	-436.523	2585
2494	-756.377	-436.662	2535
2495	-792.089	-431.42	3169
2496	-790.594	-431.565	2883
2497	-789.099	-431.71	3092
2498	-760.693	-434.41	2616
2499	-759.198	-434.549	2663
2500	-757.702	-434.688	3108
2501	-790.416	-429.731	3291
2502	-788.922	-429.876	3190
2503	-787.427	-430.021	3340
2504	-765.007	-432.156	3157
2505	-763.512	-432.296	3012
2506	-762.017	-432.436	2869
2507	-760.522	-432.576	2499
2508	-759.027	-432.715	2847
2509	-757.532	-432.854	2615
2510	-788.744	-428.042	3447
2511	-784.262	-428.475	2812
2512	-781.273	-428.762	2910
2513	-779.779	-428.905	2682
2514	-766.329	-430.181	2910
2515	-764.834	-430.322	2804
2516	-763.34	-430.462	2682
2517	-761.845	-430.602	2763
2518	-760.351	-430.741	2650
2519	-758.856	-430.881	2674

2520	-757.361	-431.02	2491
2521	-788.567	-426.209	3657
2522	-787.073	-426.353	3459
2523	-785.579	-426.498	3095
2524	-784.085	-426.641	2689
2525	-782.591	-426.785	2762
2526	-781.097	-426.929	2891
2527	-779.603	-427.072	2555
2528	-773.627	-427.641	2763
2529	-772.133	-427.783	2895
2530	-770.639	-427.925	3123
2531	-769.145	-428.066	3164
2532	-767.651	-428.207	3410
2533	-766.156	-428.347	3133
2534	-764.662	-428.488	2848
2535	-763.168	-428.628	2819
2536	-761.674	-428.768	2865
2537	-760.179	-428.907	2758
2538	-758.685	-429.047	2524
2539	-791.376	-424.086	3087
2540	-789.882	-424.231	3126
2541	-788.389	-424.375	3266
2542	-786.896	-424.52	3385
2543	-785.402	-424.664	3199
2544	-783.909	-424.808	2962
2545	-782.415	-424.951	2989
2546	-780.921	-425.095	2779
2547	-773.453	-425.807	3048
2548	-771.959	-425.949	3090
2549	-770.465	-426.091	2940
2550	-768.972	-426.232	3290
2551	-767.478	-426.373	3397
2552	-765.984	-426.513	3108
2553	-764.49	-426.654	2804
2554	-762.996	-426.794	2647
2555	-761.502	-426.934	2743
2556	-760.008	-427.073	2523
2557	-791.198	-422.252	2762
2558	-789.705	-422.397	3196
2559	-788.212	-422.542	3425
2560	-786.718	-422.686	3567
2561	-785.225	-422.83	3321
2562	-783.732	-422.974	3041
2563	-782.239	-423.118	3048
2564	-780.746	-423.261	3010
2565	-779.252	-423.404	2699
2566	-773.279	-423.974	2987
2567	-771.785	-424.115	3108

2568	-770.292	-424.257	3264
2569	-768.799	-424.398	3138
2570	-767.305	-424.539	3350
2571	-765.812	-424.679	2962
2572	-764.318	-424.82	2953
2573	-762.824	-424.96	2702
2574	-791.02	-420.419	3093
2575	-789.527	-420.564	3078
2576	-788.034	-420.708	3340
2577	-786.541	-420.853	3535
2578	-785.048	-420.997	3331
2579	-783.555	-421.141	3105
2580	-782.063	-421.284	2865
2581	-780.57	-421.427	2903
2582	-779.077	-421.57	2791
2583	-777.584	-421.713	2789
2584	-776.091	-421.856	2762
2585	-773.105	-422.14	2832
2586	-771.612	-422.281	3054
2587	-770.119	-422.423	3130
2588	-768.625	-422.564	3272
2589	-767.132	-422.705	3352
2590	-765.639	-422.845	3104
2591	-764.146	-422.986	2830
2592	-796.811	-418.003	2448
2593	-795.318	-418.149	2522
2594	-793.826	-418.295	2621
2595	-792.334	-418.44	2560
2596	-790.841	-418.585	2702
2597	-789.349	-418.73	2926
2598	-787.856	-418.875	3193
2599	-786.364	-419.019	3561
2600	-784.872	-419.163	3390
2601	-783.379	-419.307	3108
2602	-781.886	-419.451	3108
2603	-780.394	-419.594	2917
2604	-778.901	-419.737	3048
2605	-777.409	-419.88	2876
2606	-775.916	-420.022	3074
2607	-774.423	-420.164	2829
2608	-772.931	-420.306	2981
2609	-771.438	-420.448	2828
2610	-769.945	-420.589	3040
2611	-768.452	-420.73	3137
2612	-766.959	-420.871	3306
2613	-765.467	-421.011	3098
2614	-796.631	-416.17	2499
2615	-795.139	-416.316	2671

2616	-793.647	-416.461	2690
2617	-792.155	-416.607	2865
2618	-790.663	-416.752	2870
2619	-789.171	-416.897	3003
2620	-787.679	-417.041	3045
2621	-786.187	-417.186	3344
2622	-784.695	-417.33	3363
2623	-783.202	-417.473	3113
2624	-781.71	-417.617	3021
2625	-780.218	-417.76	3108
2626	-778.726	-417.903	2981
2627	-777.233	-418.046	3105
2628	-775.741	-418.188	3176
2629	-774.249	-418.33	3027
2630	-771.264	-418.614	3108
2631	-769.772	-418.755	3060
2632	-768.279	-418.896	2947
2633	-766.787	-419.037	3280
2634	-765.294	-419.177	3413
2635	-763.802	-419.318	3048
2636	-762.309	-419.458	2834
2637	-796.452	-414.336	2378
2638	-794.96	-414.482	2599
2639	-793.468	-414.628	2745
2640	-791.977	-414.773	2748
2641	-790.485	-414.918	2727
2642	-788.993	-415.063	3023
2643	-787.501	-415.208	3291
2644	-786.01	-415.352	3067
2645	-784.518	-415.496	3200
2646	-783.026	-415.64	3246
2647	-781.534	-415.783	3203
2648	-780.042	-415.927	3230
2649	-778.55	-416.07	3364
2650	-777.058	-416.212	3407
2651	-775.566	-416.355	3291
2652	-774.074	-416.497	3206
2653	-771.09	-416.78	3108
2654	-769.598	-416.921	3094
2655	-768.106	-417.062	3108
2656	-766.614	-417.203	3192
2657	-765.122	-417.344	3221
2658	-763.629	-417.484	3093
2659	-762.137	-417.624	2763
2660	-796.272	-412.503	2395
2661	-794.781	-412.649	2458
2662	-793.29	-412.795	2566
2663	-791.798	-412.94	2790
2664	-790.307	-413.085	2865

2665	-788.815	-413.23	3085
2666	-787.324	-413.374	3440
2667	-785.833	-413.519	3413
2668	-784.341	-413.663	3331
2669	-782.849	-413.806	3149
2670	-781.358	-413.95	3102
2671	-779.866	-414.093	3337
2672	-778.375	-414.236	3545
2673	-776.883	-414.379	3677
2674	-775.391	-414.521	3443
2675	-773.9	-414.663	3279
2676	-772.408	-414.805	2957
2677	-769.425	-415.088	3135
2678	-767.933	-415.229	3229
2679	-766.441	-415.369	3230
2680	-764.949	-415.51	3318
2681	-763.457	-415.65	3413
2682	-761.965	-415.79	2926
2683	-796.093	-410.67	2194
2684	-794.602	-410.816	2499
2685	-793.111	-410.961	2657
2686	-790.129	-411.252	2740
2687	-788.638	-411.397	2974
2688	-787.146	-411.541	3136
2689	-785.655	-411.685	3208
2690	-784.164	-411.829	3243
2691	-782.673	-411.973	3230
2692	-781.182	-412.116	3047
2693	-779.691	-412.259	3169
2694	-778.199	-412.402	3056
2695	-776.708	-412.545	3287
2696	-775.217	-412.687	3499
2697	-773.725	-412.829	3230
2698	-772.234	-412.971	3048
2699	-770.743	-413.113	3130
2700	-767.76	-413.395	3230
2701	-766.268	-413.535	3348
2702	-764.777	-413.676	3346
2703	-763.285	-413.816	3520
2704	-761.794	-413.956	3190
2705	-794.423	-408.983	2476
2706	-789.95	-409.419	2710
2707	-788.46	-409.563	2883
2708	-786.969	-409.708	2923
2709	-785.478	-409.852	3048
2710	-783.987	-409.996	2926
2711	-782.497	-410.139	2742
2712	-781.006	-410.283	2981
2713	-779.515	-410.426	3129
2714	-778.024	-410.569	3356
2715	-776.533	-410.711	3401
2716	-775.042	-410.854	3474
2717	-773.551	-410.996	3325

2718	-772.06	-411.137	3134
2719	-770.569	-411.279	3174
2720	-769.078	-411.42	3328
2721	-767.587	-411.561	3263
2722	-766.095	-411.702	3404
2723	-764.604	-411.842	3492
2724	-763.113	-411.982	3468
2725	-761.622	-412.122	3519
2726	-789.772	-407.585	2621
2727	-788.282	-407.73	2668
2728	-786.791	-407.874	2865
2729	-785.301	-408.019	2620
2730	-783.811	-408.162	2851
2731	-782.32	-408.306	3079
2732	-780.829	-408.449	3112
2733	-779.339	-408.592	3129
2734	-777.848	-408.735	3474
2735	-776.358	-408.878	3668
2736	-774.867	-409.02	3571
2737	-773.376	-409.162	3336
2738	-771.886	-409.304	3474
2739	-770.395	-409.445	3451
2740	-768.904	-409.586	3518
2741	-767.413	-409.727	3474
2742	-764.432	-410.008	3548
2743	-762.941	-410.148	3595
2744	-761.45	-410.288	3406
2745	-789.594	-405.752	2377
2746	-788.104	-405.897	2505
2747	-783.634	-406.329	3002
2748	-782.144	-406.473	3352
2749	-780.653	-406.616	3114
2750	-779.163	-406.759	3169
2751	-777.673	-406.902	3367
2752	-776.183	-407.044	3627
2753	-774.692	-407.186	3671
2754	-773.202	-407.328	3581
2755	-771.712	-407.47	3566
2756	-770.221	-407.611	3596
2757	-768.731	-407.753	3559
2758	-767.24	-407.893	3718
2759	-765.75	-408.034	3504
2760	-764.259	-408.174	3424
2761	-762.769	-408.314	3231
2762	-761.278	-408.454	3048
2763	-759.788	-408.594	2790
2764	-758.297	-408.733	2735
2765	-783.457	-404.496	3144
2766	-781.967	-404.639	3026
2767	-780.477	-404.783	2864
2768	-778.987	-404.926	3043
2769	-777.497	-405.068	3344
2770	-776.007	-405.211	3534

2771	-774.517	-405.353	3533
2772	-773.027	-405.495	3455
2773	-771.537	-405.636	3253
2774	-770.047	-405.778	3563
2775	-768.557	-405.919	3489
2776	-767.067	-406.06	3513
2777	-765.577	-406.2	3713
2778	-764.087	-406.341	3523
2779	-762.597	-406.481	3335
2780	-761.107	-406.62	2957
2781	-783.28	-402.662	2804
2782	-781.791	-402.806	2825
2783	-777.322	-403.235	3199
2784	-775.832	-403.377	3352
2785	-774.343	-403.519	3431
2786	-772.853	-403.661	3426
2787	-771.363	-403.803	3246
2788	-769.874	-403.944	3555
2789	-768.384	-404.085	3388
2790	-766.894	-404.226	3291
2791	-765.404	-404.367	3734
2792	-763.914	-404.507	3504
2793	-775.657	-401.544	2987
2794	-774.168	-401.686	3230
2795	-772.679	-401.828	3108
2796	-771.189	-401.969	3302
2797	-769.7	-402.111	3383
2798	-768.21	-402.252	3169
2799	-766.721	-402.392	3436
2800	-765.232	-402.533	3678
2801	-763.742	-402.673	3400
2802	-772.504	-399.994	3108
2803	-771.015	-400.136	2925
2804	-769.526	-400.277	3187
2805	-768.037	-400.418	3502
2806	-766.548	-400.559	3828
2807	-772.33	-398.161	3077
2808	-770.841	-398.302	3048
2809	-769.352	-398.444	3343

Appendix D –Monthly F(RH) Values from TCEQ Protocol

Class I Area	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Bandelier	2.2	2.1	1.8	1.6	1.6	1.4	1.7	2.1	1.9	1.7	2.0	2.2
Big Bend	2.0	1.9	1.6	1.5	1.6	1.6	1.7	2.0	2.1	1.9	1.8	1.9
Bosque del Apache	2.1	1.9	1.6	1.4	1.4	1.3	1.8	2.0	1.9	1.6	1.8	2.2
Breton	3.7	3.5	3.7	3.6	3.8	4.0	4.3	4.3	4.2	3.7	3.7	3.7
Caney Creek	3.4	3.1	2.9	3.0	3.6	3.6	3.4	3.4	3.6	3.5	3.4	3.5
Carlsbad Caverns	2.1	2.0	1.6	1.5	1.6	1.6	1.8	2.1	2.2	1.8	1.9	2.1
Great Sand Dunes	2.4	2.3	2.0	1.9	1.9	1.8	1.9	2.3	2.2	1.9	2.4	2.4
Guadalupe Mountains	2.0	2.0	1.6	1.5	1.6	1.5	1.9	2.2	2.2	1.8	1.9	2.2
Hercules-Glades	3.2	2.9	2.7	2.7	3.3	3.3	3.3	3.3	3.4	3.1	3.1	3.3
La Garita	2.3	2.2	1.9	1.8	1.8	1.6	1.7	2.1	2.0	1.8	2.2	2.3
Mesa Verde	2.5	2.3	1.9	1.5	1.5	1.3	1.6	2.0	1.9	1.7	2.1	2.3
Mingo	3.3	3.0	2.8	2.6	3.0	3.2	3.3	3.5	3.5	3.1	3.1	3.3
Pecos	2.3	2.1	1.8	1.7	1.7	1.5	1.8	2.1	2.0	1.7	2.0	2.2
Salt Creek	2.1	1.9	1.5	1.5	1.7	1.6	1.8	2.0	2.1	1.8	1.8	2.1
San Pedro Parks	2.3	2.1	1.8	1.6	1.6	1.4	1.7	2.0	1.9	1.7	2.1	2.2
Upper Buffalo	3.3	3.0	2.7	2.8	3.4	3.4	3.4	3.4	3.6	3.3	3.2	3.3
Weminuche	2.4	2.2	1.9	1.7	1.7	1.5	1.6	2.0	1.9	1.7	2.1	2.3
Wheeler Park	2.3	2.2	1.9	1.8	1.8	1.6	1.8	2.2	2.1	1.8	2.2	2.3
White Mountain	2.1	1.9	1.6	1.5	1.5	1.4	1.8	2.0	2.0	1.7	1.8	2.1
Wichita Mountains	2.7	2.6	2.4	2.4	3.0	2.7	2.3	2.5	2.9	2.6	2.7	2.8

Appendix E – Average Natural Levels of Aerosol Components from TCEQ Protocol

Class I Area	Region	SO_4	NO_3	OC	EC	Soil	Coarse Mass
Bandelier	WEST	0.12	0.10	0.47	0.02	0.50	3.00
Big Bend	WEST	0.12	0.10	0.47	0.02	0.50	3.00
Bosque del Apache	WEST	0.12	0.10	0.47	0.02	0.50	3.00
Breton	EAST	0.23	0.10	1.40	0.02	0.50	3.00
Caney Creek	EAST	0.23	0.10	1.40	0.02	0.50	3.00
Carlsbad Caverns	WEST	0.12	0.10	0.47	0.02	0.50	3.00
Great Sand Dunes	WEST	0.12	0.10	0.47	0.02	0.50	3.00
Guadalupe Mountains	WEST	0.12	0.10	0.47	0.02	0.50	3.00
Hercules-Glades	EAST	0.23	0.10	1.40	0.02	0.50	3.00
La Garita	WEST	0.12	0.10	0.47	0.02	0.50	3.00
Mesa Verde	WEST	0.12	0.10	0.47	0.02	0.50	3.00
Mingo	EAST	0.23	0.10	1.40	0.02	0.50	3.00
Pecos	WEST	0.12	0.10	0.47	0.02	0.50	3.00
Salt Creek	WEST	0.12	0.10	0.47	0.02	0.50	3.00
San Pedro Parks	WEST	0.12	0.10	0.47	0.02	0.50	3.00
Upper Buffalo	EAST	0.23	0.10	1.40	0.02	0.50	3.00
Weminuche	WEST	0.12	0.10	0.47	0.02	0.50	3.00
Wheeler Peak	WEST	0.12	0.10	0.47	0.02	0.50	3.00
White Mountain	WEST	0.12	0.10	0.47	0.02	0.50	3.00
Wichita Mountains	WEST	0.12	0.10	0.47	0.02	0.50	3.00

Appendix F - Description of Model Recompilation

CALPUFF version 5.711a, level 040716 and CALPOST version 5.51, level 030709 were recompiled. In the PARAMSL.PUF, the maximum number of METEOROLOGICAL grid cells in the X direction (mxnx) was modified from 265 to 330 and CALPUFF was recompiled since the modeling domain was large even though 6 km grid spacing was used.

In the PARAMSL.PST, the maximum number gridded receptors along "x" (mxgx) was modified from 265 to 330, and the maximum number of ozone data stations was modified from 725 to 2500. Then, CALPOST was recompiled.

PARAMSLPUF and PARAMSL.PST are reproduced below:

```
c-----------------------------------------------------------------------
c --- PARAMETER statements                                        CALPUFF
c-----------------------------------------------------------------------
c --- Specify model version
      character*12 mver, mlevel, mmodel
      parameter(mver='5.711a',mlevel='040716')
      parameter(mmodel='CALPUFF')
c
c --- Specify parameters
      parameter(mxpuff=100000)
      parameter(mxspec=20)
      parameter(mxnx=330,mxny=265,mxnz=12)
      parameter(mxnxg=265,mxnyg=265,mxrec=10000)
      parameter(mxrfog=40)
      parameter(mxss=350,mxus=99,mxps=700)
      parameter(mxpt1=200,mxpt2=200,mxarea=200,mxvert=5)
      parameter(mxlines=24,mxlngrp=1,mxvol=200)
      parameter(mxrise=50)
      parameter(mxpdep=9,mxint=9)
      parameter(mxoz=2500,mxaq=1)
      parameter(mxhill=20,mxtpts=25,mxrect=1000,mxcntr=21)
      parameter(mxprfz=50)
      parameter(mxent=10,mxntr=50,mxnw=5000)
      parameter(mxvalz=10)
      parameter(mxcoast=10,mxptcst=5000)
      parameter(mxbndry=10,mxptbdy=5000)   ! keep mxbndry LE 20
      parameter(mxmetdat=48, mxemdat=12)
      parameter(mxmetsav=2)
      parameter(mxsg=30)
      parameter(io3=3,io4=4,io5=1,io6=2,io7=7,io8=8,io9=9)
      parameter(io10=10,io11=11,io12=12,io15=15,io19=19)
      parameter(io20=20,io22=22,io23=23,io24=24)
      parameter(io25=25,io28=28,io29=29,io30=30,io31=31,io32=32)
      parameter(io35=35,io36=36,io37=37)
      parameter(iomesg=0)
      parameter(iox=99)
      parameter(iopt2=100)
      parameter(ioar2=iopt2+mxemdat)
      parameter(iovol=ioar2+mxemdat)
c
c
```

```
c --- Compute derived parameters
      parameter(mxbc=2*mxnx+2*mxny)
      parameter(mxnzp1=mxnz+1)
      parameter(mxvertp1=mxvert+1)
      parameter(mxnxy=mxnx*mxny)
      parameter(mxnxyg=mxnxg*mxnyg)
      parameter(mxgsp=mxnxg*mxnyg*mxspec)
      parameter(mxrsp=mxrec*mxspec)
      parameter(mxcsp=mxrect*mxspec)
      parameter(mx2=2*mxspec,mx5=5*mxspec,mx7=7*mxspec)
      parameter(mxp2=2+mxspec,mxp3=3+mxspec)
      parameter(mxp4=4+mxspec,mxp6=6+mxspec)
      parameter(mxp7=7+mxspec,mxp8=8+mxspec,mxp14=mxspec+14)
      parameter(mxpuf6=6*mxpuff)
      parameter(mxlev=mxprfz)
      parameter(mxprfp1=mxprfz+1)
      parameter(mxentp1=mxent+1)
      parameter(mxgrup=mxspec)
      parameter(mxq12=mxspec*(mxpt1+mxarea)*2)
      parameter(mxspar=mxspec*mxarea,mxspln=mxspec*mxlines)
      parameter(mxsppt1=mxspec*mxpt1,mxspvl=mxspec*mxvol)
      parameter(mxspbc=mxspec*mxbc)
c
c --- Specify parameters for sizing GUI:
      parameter(mxavar=1)
      parameter(mxlvar=1)
      parameter(mxpvar=1)
      parameter(mxvvar=1)
c
c --- GENERAL PARAMETER definitions:
c        MXPUFF - Maximum number of active puffs allowed on the
c                 computational grid at one time
c        MXSLUG - Maximum number of active slugs allowed on the
c                 computational grid at one time (can be set to
c                 one if the slug option is not used)
c        MXSPEC - Maximum number of chemical species.  N.B.: Changes
c                 to MXSPEC may also require code changes to BLOCK DATA
c                 and READCF.
c        MXGRUP - Maximum number of Species-Groups.  Results for grouped
c                 species are added together and reported using the
c                 name of the group, rather than the name of one of the
c                 species in the group. (MXGRUP = MXSPEC since specie
c                 names are used as group names whenever group names are
c                 not provided)
c          MXNX - Maximum number of METEOROLOGICAL grid cells in
c                 the X direction
c          MXNY - Maximum number of METEOROLOGICAL grid cells in
c                 the Y direction
c          MXNZ - Maximum number of vertical layers in
c                 the METEOROLOGICAL grid
c         MXNXG - Maximum number of SAMPLING grid cells in
c                 the X direction
c         MXNYG - Maximum number of SAMPLING grid cells in
c                 the Y direction
c         MXREC - Maximum number of non-gridded receptors
c        MXRFOG - Maximum number of distances used when MFOG=1
```

```
c                 NOTE:  There are NPT1+NPT2 receptor 'trails', with
c                        MXRFOG receptors on each, so
c                        MXREC >= (NPT1+NPT2)*MXRFOG
c          MXSS - Maximum number of surface meteorological stations
c                 in the CALMET data
c          MXUS - Maximum number of upper air stations in the CALMET
c                 data
c          MXPS - Maximum number of precipitation stations in the
c                 CALMET data
c          MXBC - Maximum number of sources used to represent boundary
c                 conditions (inlux of background mass);  source
c                 segments span the computational domain perimeter
c         MXPT1 - Maximum number of point sources with constant
c                 emission parameters
c         MXPT2 - Maximum number of point sources with time-varying
c                 emission parameters
c        MXAREA - Maximum number of polygon area sources with constant
c                 emission parameters (i.e., non-gridded area sources)
c        MXVERT - Maximum number of vertices in polygon area source
c        MXLINES- Maximum number of line sources
c        MXLNGRP- Maximum number of groups of line sources
c         MXVOL - Maximum number of volume sources
c        MXRISE - Maximum number of points in computed plume rise
c                 tabulation for buoyant area and line sources
c        MXPDEP - Maximum number of particle species dry deposited
c         MXINT - Maximum number of particle size intervals used
c                 in defining mass-weighted deposition velocities
c          MXOZ - Maximum number of ozone data stations (for use in the
c                 chemistry module)
c          MXAQ - Maximum number of Air Quality data stations (e.g.
c                 H2O2 data stations for aqueous chemistry module)
c        MXHILL - Maximum number of subgrid-scale (CTSG) terrain
c                 features
c        MXTPTS - Maximum number of points used to obtain flow
c                 factors along the trajectory of a puff over the hill
c        MXRECT - Maximum number of complex terrain (CTSG) receptors
c        MXCNTR - Maximum number of hill height contours (CTDM ellipses)
c        MXPRFZ - Maximum number of vertical levels of met. data in
c                 CTDM PROFILE file
c         MXLEV - Maximum number of vertical levels of met. data
c                 allowed in the CTSG module (set to MXPRFZ in the
c                 current implementation of CALPUFF)
c         MXENT - Maximum number of perturbed entrainment coefficients
c                 entered
c         MXNTR - Maximum number of downwind distances for which
c                 numerical plume rise will be reported
c          MXNW - Maximum number of downwind distances for numerical
c                 plume rise integration (should be set equal to
c                 SLAST/DS)
c        MXVALZ - Maximum number of heights above ground at which valley
c                 widths are found for each grid cell
c       MXCOAST - Maximum number of coasts provided in COASTLN.DAT file
c       MXPTCST - Maximum number of points used to store all coastlines
c       MXBNDRY - Maximum number of boundaries provided in FLUXBDY.DAT
c       MXPTBDY - Maximum number of points used to store all boundaries
c      MXMETDAT - Maximum number of CALMET.DAT files used in run
```

```
c       MXEMDAT - Maximum number of variable emissions files (each type)
c      MXMETSAV - Maximum number of met periods for which source tables
c                 (e.g. numerical rise) are saved
c         MXQ12 - Maximum number of groups of 12 emission rate scaling
c                 factors.  Factors come in groups of 12,24,36, or 96.
c                 These are specified for source-species combinations,
c                 but not all combinations will be filled.  Default
c                 value of MXQ12 assumes that no more than 24 factors
c                 are provided for each source-species combination for
c                 point and area sources.
c
c --- CONTROL FILE READER definitions:
c          MXSG - Maximum number of input groups in control file
c
c --- FORTRAN I/O unit numbers:
c           IO3 - Restart file (RESTARTB.DAT)   - input  - unformatted
c           IO4 - Restart file (RESTARTE.DAT)   - output - unformatted
c           IO5 - Control file (CALPUFF.INP)    - input  - formatted
c           IO6 - List file (CALPUFF.LST)       - output - formatted
c
c           IO7 - Meteorological data file      - input  - unformatted
c                 (CALMET.DAT)
c
c           IO8 - Concentration output file     - output - unformatted
c                 (CONC.DAT)
c           IO9 - Dry flux output file          - output - unformatted
c                 (DFLX.DAT)
c          IO10 - Wet flux output file          - output - unformatted
c                 (WFLX.DAT)
c          IO11 - Visibility output file        - output - unformatted
c                 (VISB.DAT)
c          IO12 - Fog plume data output file    - output - unformatted
c                 (FOG.DAT)
c          IO15 - Boundary Condition file       - input  - unformatted
c                 (BCON.DAT)
c          IO19 - Buoyant line sources file     - input  - free format
c                 (LNEMARB.DAT) with arbitrarily
c                 varying location & emissions
c          IO20 - User-specified deposition     - input  - formatted
c                 velocities (VD.DAT)
c          IO22 - Hourly ozone monitoring data  - input  - formatted
c                 (OZONE.DAT)
c          IO23 - Hourly H2O2 monitoring data   - input  - formatted
c                 (H2O2.DAT)
c          IO24 - User-specified chemical       - input  - formatted
c                 transformation rates
c                 (CHEM.DAT)
c          IO25 - User-specified coast line(s)  - input  - free format
c                 for sub-grid TIBL module
c                 (COASTLN.DAT)
c          IO28 - CTSG hill specifications from - input  - formatted
c                 CTDM terrain processor
c                 (HILL.DAT)
c          IO29 - CTSG receptor specifications  - input  - formatted
c                 from CTDM receptor generator
c                 (RECS.DAT)
```

```
c          IO30 - Tracking puff/slug data       - output - formatted
c                 (DEBUG.DAT)
c          IO31 - CTDM "tower" data             - input  - formatted
c                 (PROFILE.DAT)
c          IO32 - CTDM surface layer parameters - input  - formatted
c                 (SURFACE.DAT)
c          IO35 - User-specified boundary lines(s)- input- free format
c                 for mass flux calculations
c                 (FLUXBDY.DAT)
c          IO36 - Mass flux data                - output - formatted
c                 (MASSFLX.DAT)
c          IO37 - Mass balance data             - output - formatted
c                 (MASSBAL.DAT)
c         IOPT2 - 1st Pt. source emissions file - input  - unformatted
c                 (PTEMARB.DAT) with arbitrarily           or free fmt
c                 varying point source emissions
c         IOAR2 - 1st Buoyant area sources file - input  - free format
c                 (BAEMARB.DAT) with arbitrarily
c                 varying location & emissions
c         IOVOL - 1st Volume source file        - input  - unformatted
c                 (VOLEMARB.DAT) with arbitrarily          of free fmt
c                 varying location & emissions
c        IOMESG - Fortran unit number for screen- output - formatted
c                 output (NOTE: This unit is
c                 NOT opened -- it must be a
c                 preconnected unit to the screen
c                 -- Screen output can be suppressed
c                 by the input "IMESG" in the
c                 control file)
c           IOX - Fortran unit number for      - scratch - formatted
c                 temporary file of "doc" records
c                 written to header of output files
c
c
c --- GUI memory control parameters:  variable emissions scaling factors
c     for areas, lines, points, and volumes require much memory in GUI.
c     To reduce GUI memory requirement, set one or more of the
c     following parameters to ZERO when such scaling is not required.
c     These parameters have no effect on CALPUFF, but are read by the
c     GUI at execution time.
c
c        MXAVAR - Using scaled area sources?   (1:yes, 0:no)
c        MXLVAR - Using scaled line sources?   (1:yes, 0:no)
c        MXPVAR - Using scaled point sources?  (1:yes, 0:no)
c        MXVVAR - Using scaled volume sources? (1:yes, 0:no)
c
c
c ------------------------------------------------------------------


c-----------------------------------------------------------------------
c  PARAMETERS -- Array dimensions and I/O units                  CALPOST
c-----------------------------------------------------------------------
c --- Specify model version
      character*12 mver, mlevel
      parameter(mver='5.51',mlevel='030709')
```

```
c --- Specify application size
      PARAMETER(mxgx=330)
      PARAMETER(mxgy=265)
      PARAMETER(mxgrec=mxgx*mxgy)
      PARAMETER(mxdrec=10000, mxring=40)
      PARAMETER(mxctrec=1000)
      PARAMETER(mxtser=30)
      PARAMETER(mxnz=1,mxspec=20)
      PARAMETER(mxsplv=mxnz*mxspec)
      PARAMETER(mxss=350)
      PARAMETER(mxwsta=30)
      PARAMETER(mxday=366)
c ---      PARAMETER(mxday=400)
      PARAMETER(mxwin=10)
      PARAMETER(mxrnk=10,mxtop=4)             !Keep mxtop=4
      PARAMETER(icols=25)
      PARAMETER(in1=4,in2=5,in3=9,in4=18,in5=19)
      PARAMETER(io1=8,io6=6)
      PARAMETER(iot1=21,iot3=22,iot24=23,iotn=24)
      PARAMETER(mapu=11)
      PARAMETER(iox1=12,iox2=13,iox3=14,iox4=15)
      PARAMETER(iowx1=31,iowx2=32,iohrv=33)
      parameter(mxsg=4)
c-----------------------------------------------------------------------
c     DEFINITIONS       [i]=integer     [r]=real        [a]=array
c-----------------------------------------------------------------------
c mxgx           maximum number gridded receptors along "x"          [i]
c mxgy           maximum number gridded receptors along "y"          [i]
c mxgrec         product mxgx*mxgy                                   [i]
c mxdrec         maximum number of discrete receptors                [i]
c mxring         maximum number of discrete receptor "rings"         [i]
c mxctrec        maximum number of complex terrain (CTSG) receptors  [i]
c mxtser         maximum number of receptors in timeseries output    [i]
c mxnz           maximum number of levels                            [i]
c mxspec         maximum number of species                           [i]
c mxsplv         max number of chemical species * max number levels  [i]
c mxss           max number of surface stations in CALMET/CALPUFF    [i]
c mxwsta         max number of weather stations in VSRN.DAT (DATSAV3)[i]
c mxday          max number of days in run for violation option      [i]
c mxwin          max number of days in window (for violation search) [i]
c mxrnk          max rank of top-ranked concentrations               [i]
c mxtop          max number of top-ranked concentrations             [i]
c icols          number of columns in gridded integer output         [i]
c in1            unit number for "concentration" input file          [i]
c in2            unit number for control file input                  [i]
c in3            unit number for input file of RH data               [i]
c in4            unit number for input file of background data       [i]
c in5            unit number for input file of visual range data     [i]
c io1            unit number for output list file                    [i]
c io6            unit number for standard output (error messages)    [i]
c iot1           unit number for timeseries file (1hr avg)           [i]
c iot3           unit number for timeseries file (3hr avg)           [i]
c iot24          unit number for timeseries file (24hr avg)          [i]
c iotn           unit number for timeseries file (Nhr avg)           [i]
c mapu           unit number for current plot-file                   [i]
c iox1           unit number for scratch file (extinction summary)   [i]
```

```
c iox2           unit number for scratch file (deciview summary)     [i]
c iox3           unit number for scratch file (run length extinction)[i]
c iox4           unit number for scratch file (run length deciview)  [i]
c iowx1          unit number for scratch file (weather data image 1) [i]
c                (saved as DEBUG.WX1 when LDEBUG=T)
c iowx2          unit number for scratch file (weather data image 2) [i]
c                (saved as DEBUG.WX2 when LDEBUG=T)
c iohrv          unit number for hourly visibility calculation       [i]
c                details (saved as DEBUG.HRV when LDEBUG=T)
c-----------------------------------------------------------------------
c
c --- CONTROL FILE READER definitions:
c          MXSG - Maximum number of input groups in control file
```