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RON CURRY  
Secretary  
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Deputy Secretary

November 11, 2009

George Basabilvazo  
Department of Energy  
Carlsbad Field Office  
Carlsbad, NM 88220

**Subject: Direct Penetrating Radiation Monitoring at the Waste Isolation Pilot Plant  
Conducted by NMED/DOE OB for the Third Calendar Quarter 2009**

Mr. Mr. Basabilvazo,

This letter transmits the subject report for your review.

The monitoring results are provided to DOE for review and comment prior to their release as final to other State of New Mexico and federal agencies, the NMED website and interested members of the public. If you have any questions, or would like copies of the complete data set, please contact me at 575-887-6851.

Sincerely,

Thomas Kesterson  
Environmental Specialist –O  
WIPP Oversight Section

Enclosure: Draft data submittal entitled: “Direct Penetrating Radiation Monitoring at the Waste Isolation Pilot Plant Conducted by NMED/DOE OB for the Third Calendar Quarter 2009” with the following enclosures:

1. Graph 1– DPR 3rd Calendar Quarter, 2009 Quarterly Dose
2. Table 1 – Direct Penetrating Radiation as Measured by Electrets CY 2009 Q-3

3. Figure 1 – Location of Electret Gamma Monitors in the Vicinity of Carlsbad
4. Figure 2 – Location of Electret Gamma Monitors near WIPP
5. Physical Location of the Oversight Bureau's Electret Gamma Monitors

Cc: Dan Ferguson, Site Regulatory Specialist, DOE / CBFO  
Tom Skibitski, Bureau Chief, NMED DOE OB



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**Direct Penetrating Radiation Monitoring at the Waste Isolation Pilot Plant/ New Mexico conducted by NMED/DOE OB for the Third Calendar Quarter 2009**

The New Mexico Environment Department (NMED) DOE Oversight Bureau has compiled and assessed direct penetrating radiation (DPR) data collected during the third calendar quarter 2009. The accompanying data report shows DPR dose levels at various locations surrounding the Waste Isolation Pilot Plant, at the Oversight Bureau Office in Carlsbad, and at the Malaga Volunteer Fire Department. The data were obtained using RadElect gamma radiation monitoring electrets.

DPR results ranged from a minimum Average Quarterly Dose of 24.2 mRad at WIPP 3 (adjacent to the WIPP) to a maximum Average Quarterly Dose of 32.5 mRad at WIPP 16. WIPP 16 is at the rest area between Loving and Carlsbad. It is at this rest area that TRU shipments entering the state from the southern route must normally pass a Level VI inspection, though this route has not been used since September, 2008.

Currently, WIPP 15 serves for Quality Assurance, and is in the Oversight Bureau Office in Carlsbad. Its third quarter Average Quarterly dose was 27.3 mRad.

Graph-1 compares NMED DPR results by location for the third calendar quarter and includes on-site and off-site averages, including  $\pm$  Standard Deviation, which can be compared with the ten month average from WIPP 15.

Table 1 shows the individual results from each electret. Figures 1 and 2 show the approximate locations of the gamma monitors relative to the WIPP, and the final enclosure gives a brief description of where these instruments are located.

Response

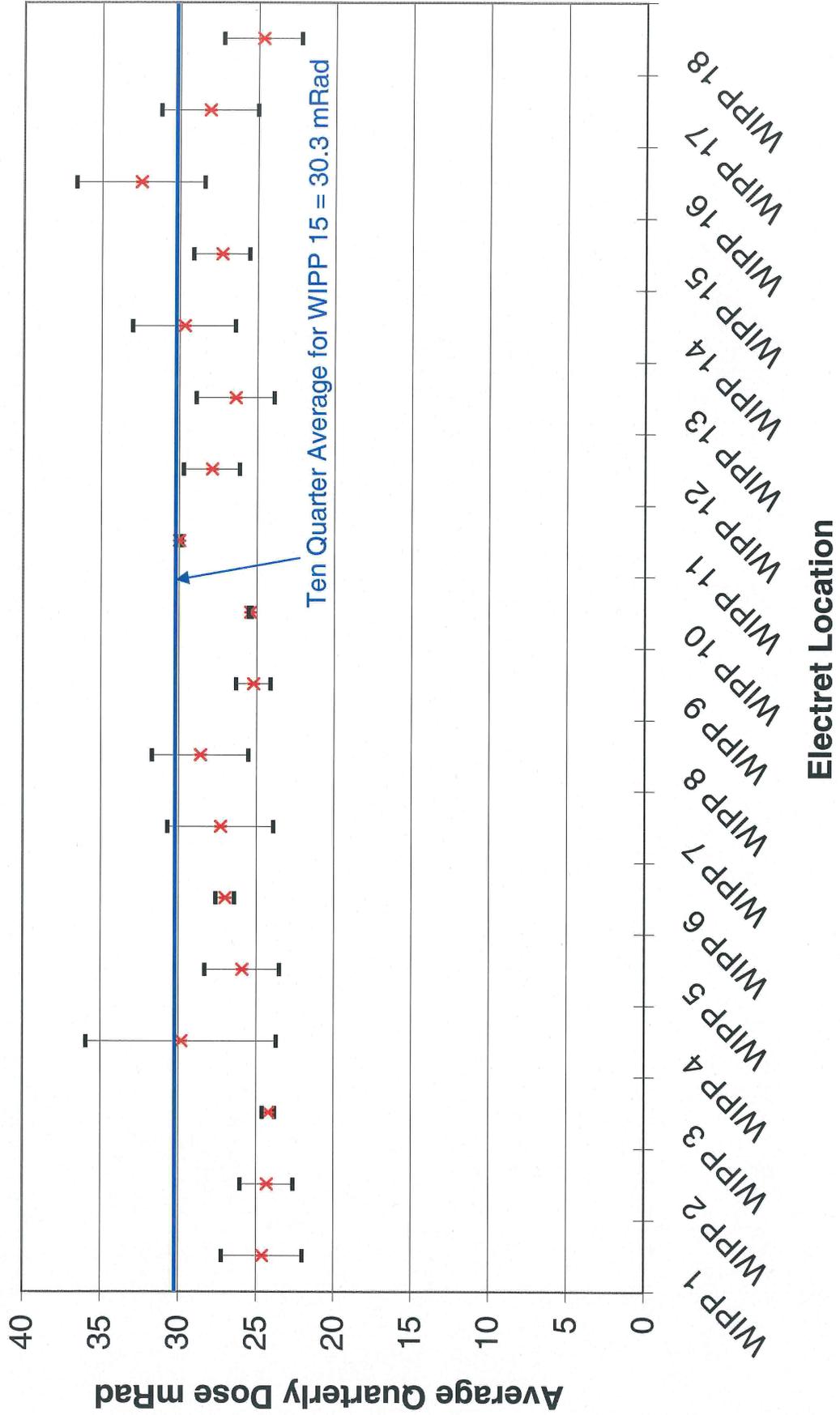
Questions and or comments may be addressed to Thomas Kesterson by phone at (575)-887-6851, by e-mail at [thomasl.kesteron@state.nm.us](mailto:thomasl.kesteron@state.nm.us), or to the address in the above letterhead.

- Enclosures:
1. Graph 1 – DPR 3rd Calendar Qtr 2009, Quarterly Dose
  2. Table 1 – Direct Penetrating Radiation as Measured by Electrets CY 2009 Q-3
  3. Figure 1 - Location of Electret Gamma Monitors in the Vicinity of Carlsbad
  4. Figure 2 – Location of Electret Gamma Monitors near WIPP
  5. Location of the Oversight Bureau's Electret Gamma Monitors.

Distribution: George Basabilvazo, DOE  
Dan Ferguson, DOE  
Tom Skibitski, Chief, DOE-OB

Draft

# DPR 3rd Calendar Quarter, 2009 Quarterly Dose



**Table-1: Direct Penetrating Radiation as Measured by Electrets CY 2009 Q-3**

New Mexico Environment Department, DOE Oversight Bureau, WIPP Section

**WIPP 1**

Electret Number	Start Date and Time	Finish Date and Time	# of Days:	Voltage Drop	Quarterly Dose
SBZ 776	6/30/09 7:36 AM	9/30/09 8:12 AM	92.03	42	23.1
SBZ 783	6/30/09 7:36 AM	9/30/09 8:12 AM	92.03	42	23.1
SX 3856	6/30/09 7:36 AM	9/30/09 8:12 AM	92.03	55	27.5
<b>Average Quarterly Dose in mRad:</b>					<b>24.6</b>

**WIPP 2**

Electret Number	Start Date and Time	Finish Date and Time	# of Days:	Voltage Drop	Quarterly Dose
SBZ 900	6/30/09 7:46 AM	9/30/09 7:07 AM	91.97	48	25.6
SBZ 901	6/30/09 7:46 AM	9/30/09 7:07 AM	91.97	47	24.8
SBZ 906	6/30/09 7:46 AM	9/30/09 7:07 AM	91.97	43	22.4
<b>Average Quarterly Dose in mRad:</b>					<b>24.3</b>

**WIPP 3**

Electret Number	Start Date and Time	Finish Date and Time	# of Days:	Voltage Drop	Quarterly Dose
SBZ 889	6/30/09 7:56 AM	9/30/09 8:22 AM	92.02	45	24.6
SBZ 893	6/30/09 7:56 AM	9/30/09 8:22 AM	92.02	44	23.9
SBZ 892	6/30/09 7:56 AM	9/30/09 8:22 AM	92.02	45	24.2
<b>Average Quarterly Dose in mRad:</b>					<b>24.2</b>

**WIPP 4**

Electret Number	Start Date and Time	Finish Date and Time	# of Days:	Voltage Drop	Quarterly Dose
SBZ 861	6/30/09 8:08 AM	9/30/09 8:30 AM	92.02	66	36.7
SBZ 858	6/30/09 8:08 AM	9/30/09 8:30 AM	92.02	48	26.8
SBZ 860	6/30/09 8:08 AM	9/30/09 8:30 AM	92.02	47	26.0
<b>Average Quarterly Dose in mRad:</b>					<b>29.8</b>

**WIPP 5**

Electret Number	Start Date and Time	Finish Date and Time	# of Days:	Voltage Drop	Quarterly Dose
SBZ 796	6/30/09 8:16 AM	9/30/09 8:38 AM	92.02	42	23.2
SX3836	6/30/09 8:16 AM	9/30/09 8:38 AM	92.02	55	27.9
SX3746	6/30/09 8:16 AM	9/30/09 8:38 AM	92.02	52	26.6
<b>Average Quarterly Dose in mRad:</b>					<b>25.9</b>

**Table-1: Direct Penetrating Radiation as Measured by Electrets CY 2009 Q-3**

New Mexico Environment Department, DOE Oversight Bureau, WIPP Section

**WIPP 6**

Electret Number	Start Date and Time	Finish Date and Time	# of Days:	Voltage Drop	Quarterly Dose
SFC 099	6/30/09 8:30 AM	9/30/09 9:57 AM	92.06	56	27.4
SFC 126	6/30/09 8:30 AM	9/30/09 9:57 AM	92.06	54	26.4
SFC 171	7/6/09 8:00 AM	9/30/09 9:57 AM	86.08	56	27.3
<b>Average Quarterly Dose in mRad:</b>					<b>27.0</b>

**WIPP 7**

Electret Number	Start Date and Time	Finish Date and Time	# of Days:	Voltage Drop	Quarterly Dose
SX 3872	7/2/09 8:11 AM	10/2/09 8:04 AM	92.00	60	30.8
SBZ 873	7/2/09 8:11 AM	10/2/09 8:04 AM	92.00	45	24.0
SBZ 876	7/2/09 8:11 AM	10/2/09 8:04 AM	92.00	49	27.1
<b>Average Quarterly Dose in mRad:</b>					<b>27.3</b>

**WIPP 8**

Electret Number	Start Date and Time	Finish Date and Time	# of Days:	Voltage Drop	Quarterly Dose
SBZ 853	7/2/09 8:56 AM	10/2/09 8:50 AM	92.00	46	25.5
SBZ 855	7/2/09 8:56 AM	10/2/09 8:50 AM	92.00	51	28.2
SFC 095	7/2/09 8:56 AM	10/2/09 8:50 AM	92.00	65	31.7
<b>Average Quarterly Dose in mRad:</b>					<b>28.5</b>

**WIPP 9**

Electret Number	Start Date and Time	Finish Date and Time	# of Days:	Voltage Drop	Quarterly Dose
SBZ 894	7/2/09 8:54 AM	10/2/09 8:53 AM	92.00	43	24.0
SBZ 895	7/2/09 8:54 AM	10/2/09 8:53 AM	92.00	46	25.5
SBZ 897	7/2/09 8:54 AM	10/2/09 8:53 AM	92.00	47	26.1
<b>Average Quarterly Dose in mRad:</b>					<b>25.2</b>

**WIPP 10**

Electret Number	Start Date and Time	Finish Date and Time	# of Days:	Voltage Drop	Quarterly Dose
SBZ 886	7/2/09 8:52 AM	10/2/09 8:44 AM	91.99	46	25.3
SBZ 887	7/2/09 8:52 AM	10/2/09 8:44 AM	91.99	46	25.5
SBZ 888	7/2/09 8:52 AM	10/2/09 8:44 AM	91.99	46	25.5
<b>Average Quarterly Dose in mRad:</b>					<b>25.4</b>

**Table-1: Direct Penetrating Radiation as Measured by Electrets CY 2009 Q-3**

New Mexico Environment Department, DOE Oversight Bureau, WIPP Section

**WIPP 11**

Electret Number	Start Date and Time	Finish Date and Time	# of Days:	Voltage Drop	Quarterly Dose
SFC 068	6/30/09 7:23 AM	9/30/09 8:03 AM	92.03	46	30.2
SFC 187	6/30/09 7:23 AM	9/30/09 8:03 AM	92.03	62	29.9
SFC 201	6/30/09 7:23 AM	9/30/09 8:03 AM	92.03	61	30.0
<b>Average Quarterly Dose in mRad:</b>					<b>30.0</b>

**WIPP 12**

Electret Number	Start Date and Time	Finish Date and Time	# of Days:	Voltage Drop	Quarterly Dose
SFC 013	6/30/09 8:41 AM	9/30/09 10:03 AM	92.06	61	29.4
SX 3896	6/30/09 8:41 AM	9/30/09 10:03 AM	92.06	60	26.0
SFC 108	6/30/09 8:41 AM	9/30/09 10:03 AM	92.06	51	28.3
<b>Average Quarterly Dose in mRad:</b>					<b>27.9</b>

**WIPP 13**

Electret Number	Start Date and Time	Finish Date and Time	# of Days:	Voltage Drop	Quarterly Dose
SFC 067	6/30/09 8:48 AM	9/30/09 10:08 AM	92.06	58	28.8
SFC 140	6/30/09 8:48 AM	9/30/09 10:08 AM	92.06	59	24.0
SFC 188	6/30/09 8:48 AM	9/30/09 10:08 AM	92.06	49	26.4
<b>Average Quarterly Dose in mRad:</b>					<b>26.4</b>

**WIPP 14**

Electret Number	Start Date and Time	Finish Date and Time	# of Days:	Voltage Drop	Quarterly Dose
SFC 064	6/30/09 8:57 AM	9/30/09 10:10 AM	92.05	54	28.9
SFC 077	6/30/09 8:57 AM	9/30/09 10:10 AM	92.05	59	33.4
SFC 152	6/30/09 8:57 AM	9/30/09 10:10 AM	92.05	68	26.9
<b>Average Quarterly Dose in mRad:</b>					<b>29.7</b>

**WIPP 15 Carlsbad**

Electret Number	Start Date and Time	Finish Date and Time	# of Days:	Voltage Drop	Quarterly Dose
SX 3785	6/30/09 11:15 AM	10/3/09 9:56 AM	94.95	55	25.4
SX 3823	6/30/09 11:15 AM	10/3/09 9:56 AM	94.95	53	27.9
SX 3911	6/30/09 11:15 AM	10/3/09 9:56 AM	94.95	58	28.4
<b>Average Quarterly Dose in mRad:</b>					<b>27.3</b>

**Table-1: Direct Penetrating Radiation as Measured by Electrets CY 2009 Q-3**

New Mexico Environment Department, DOE Oversight Bureau, WIPP Section

**WIPP 16**

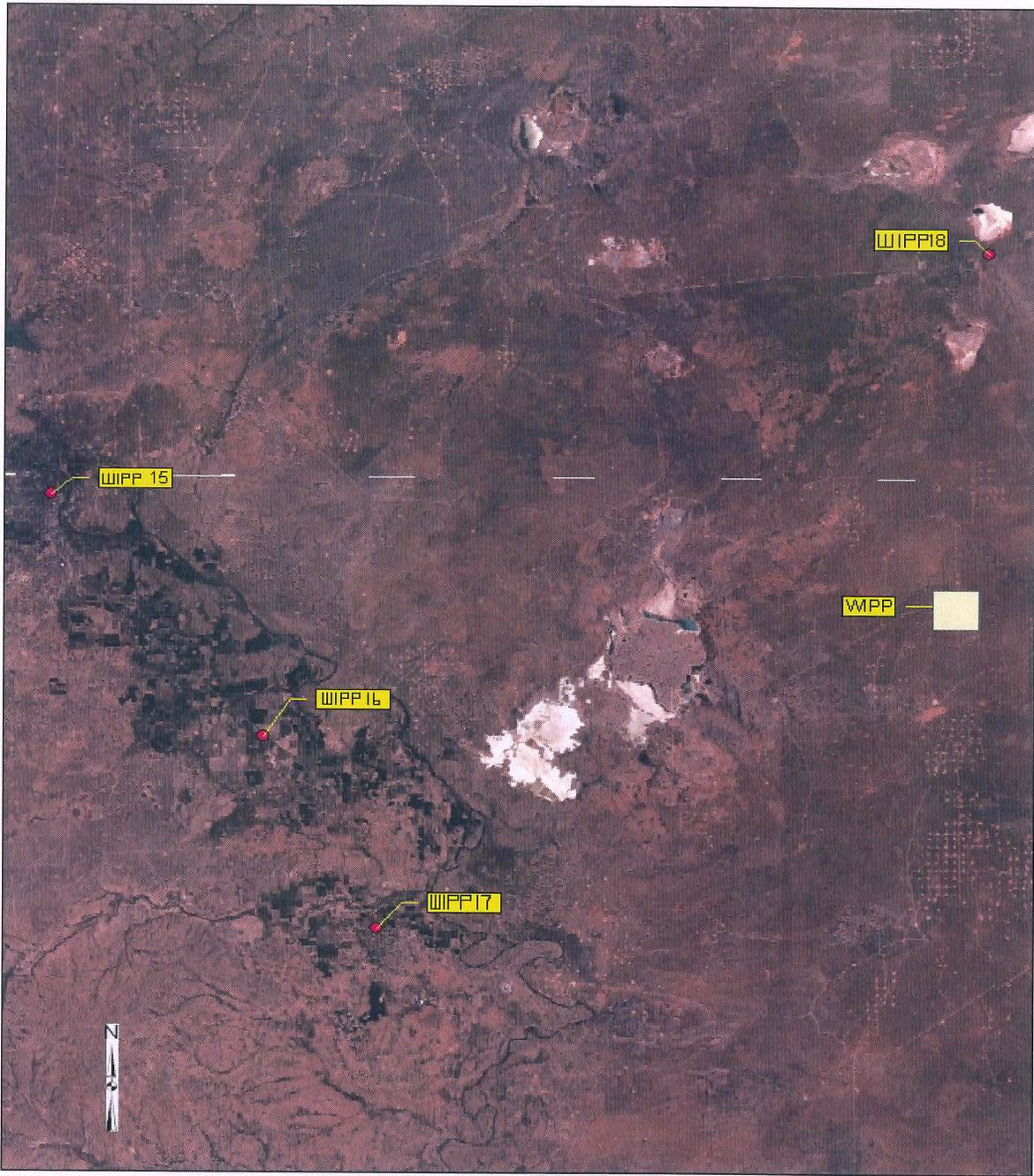
Electret Number	Start Date and Time	Finish Date and Time	# of Days:	Voltage Drop	Quarterly Dose
SFC 060	7/2/09 3:23 AM	10/1/09 3:59 PM	91.53	77	37.0
SFC 132	7/2/09 3:23 AM	10/1/09 3:59 PM	91.53	64	30.7
SFC 173	7/2/09 3:23 AM	10/1/09 3:59 PM	91.53	62	29.7
<b>Average Quarterly Dose in mRad:</b>					<b>32.5</b>

**WIPP 17**

Electret Number	Start Date and Time	Finish Date and Time	# of Days:	Voltage Drop	Quarterly Dose
SBZ 847	6/30/09 12:21 PM	10/1/09 3:30 PM	93.13	59	31.4
SBZ 852	6/30/09 12:21 PM	10/1/09 3:30 PM	93.13	49	25.6
SBZ 880	6/30/09 12:21 PM	10/1/09 3:30 PM	93.13	52	27.1
<b>Average Quarterly Dose in mRad:</b>					<b>28.1</b>

**WIPP 18**

Electret Number	Start Date and Time	Finish Date and Time	# of Days:	Voltage Drop	Quarterly Dose
SBZ 908	6/30/09 9:34 AM	9/30/09 10:35 AM	92.04	53	27.0
SBZ 851	6/30/09 9:34 AM	9/30/09 10:35 AM	92.04	49	24.8
SBZ 879	6/30/09 9:34 AM	9/30/09 10:35 AM	92.04	45	22.2
<b>Average Quarterly Dose in mRad:</b>					<b>24.7</b>



**Figure 1: Location of Electret Gamma Monitors in the Vicinity of Carlsbad.**

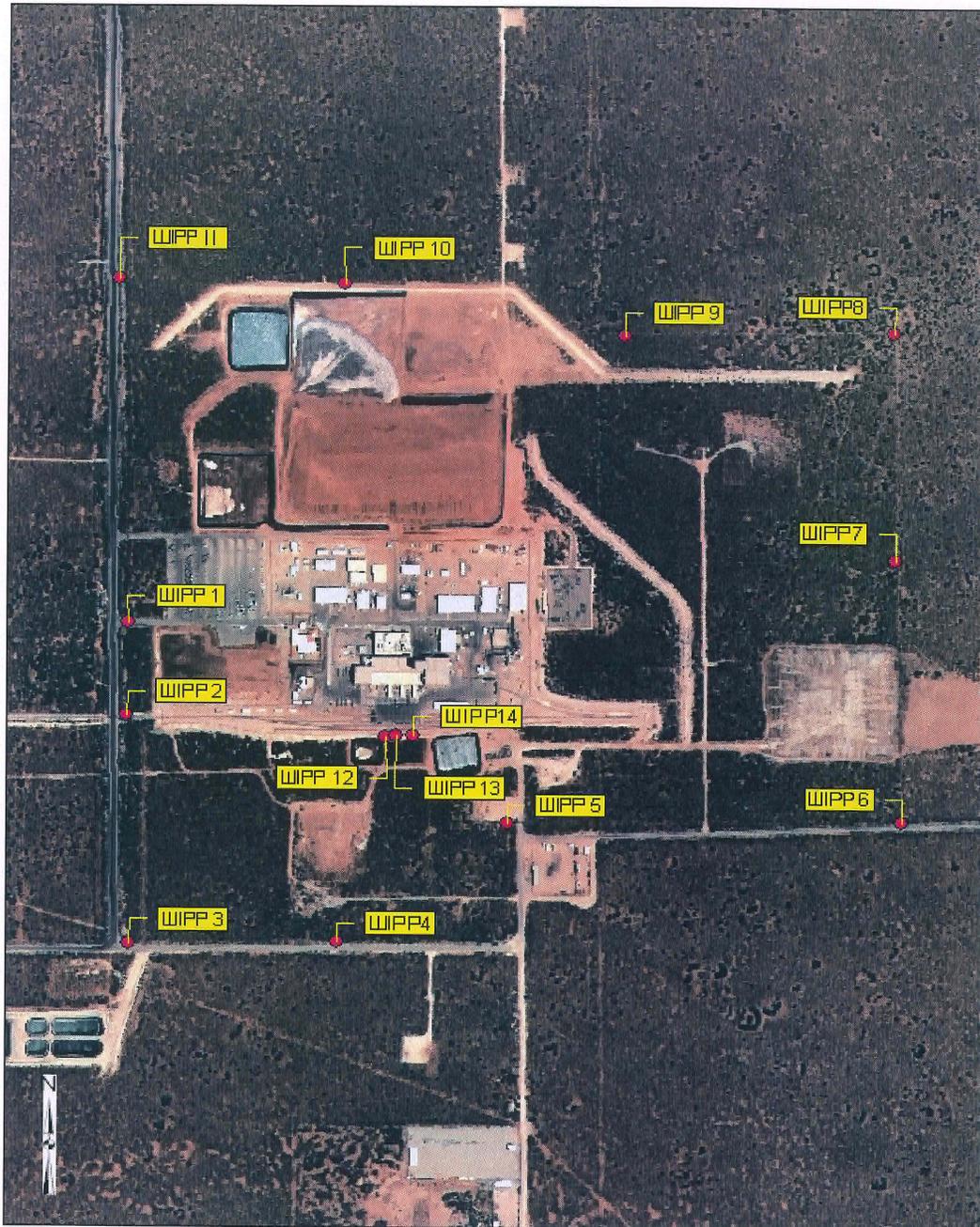


Figure 2: Location of Electret Gamma Monitors near WIPP.

## Physical Location of the Oversight Bureau's Electret Gamma Monitors

WIPP 1 – On the Exclusive Use Area fence, east side of the North Access Rd., just north of the cattle guard at the south drive way into the main parking lot at the WIPP.

WIPP 2 – South of the main parking lot at the WIPP, east side of the North Access Rd. on the back side of the gate in the Exclusive Use Area, north of the rail road track.

WIPP 3 – South of the WIPP, east of the intersection of the North Access Rd. and WIPP Rd. on the Exclusive Use Area fence, north of the cattle guard.

WIPP 4 – On the Exclusive Use Area fence, east of WIPP 3.

WIPP 5 – Following the WIPP Rd beyond its intersection with the North Access Rd. until it stops at a "Tee"- intersection, towards the north. The Exclusive Use Area fence goes to the west, away from the road. This gamma monitor is on a corner of the fence here.

WIPP 6 – On the south-east corner of the Exclusive Use Area fence.

WIPP 7 – This is on the east side of the Exclusive Use Area fence, between WIPP 6 and WIPP 8.

WIPP 8 – At the north-east corner of the Exclusive Use Area fence.

WIPP 9 – On the north Exclusive Use Area fence, between WIPP 8 and WIPP 10.

WIPP 10 – East of WIPP 11, on the fence of the Exclusive Use Area, north side of the salt pile.

WIPP 11 – East side of the North Access Rd, north of the WIPP, at the north-west corner of the Exclusive Use Area fence, across the road from the Far Field Ambient Air Monitoring station.

WIPP 12 – Just south of the loading dock, behind the WHB, on the Property Protection Area fence, south of the railroad track.

WIPP 13 - Just south of the loading dock, behind the WHB, on the Property Protection Area fence, south of the railroad track.

WIPP 14 - Just south of the loading dock, behind the WHB, on the Property Protection Area fence, south of the railroad track.

WIPP 15 - Outside the Oversight Bureau Office in Carlsbad.

WIPP 16 - At the rest area on US 285 between Loving and Carlsbad, on the fence behind the picnic tables.

WIPP 17 - Near the intersection of US 285 and Black River Village Rd, at the Malaga Volunteer Fire Department.

WIPP 18 - Near the intersection of the Hobbs Highway and the North Access Road, just west of the cattle guard on the North Access Rd.