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December 4, 2001

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Magalie Roman Salas, Secretary
Federal Communications Commission
445 12th Street, S.W., Room 204 B
Washington, D.C. 20554

Re: MDS America, Incorporated
***Ex Parte* Submission, ET Docket No. 98-206**

Dear Ms. Salas:

MDS America, Incorporated ("MDS America") has had a number of meetings with Commission staff concerning the above-referenced docket. In these meetings, MDS America has discussed with Commission staff the importance of promulgating rules for Multichannel Video Distribution and Data Service ("MVDDS") that are technology-agnostic, consistent with well-established Commission policy for new wireless services. MDS America supports the Commission's continued diligence in this proceeding to balance the various public policies at stake, including bringing broadband services to rural America and increasing competition in the video programming market. In this same spirit, MDS America respectfully submits technical recommendations to the Commission, in addition to those provided previously in formal comments, to assist in the preparation of final MVDDS rules.

In particular, MDS America respectfully requests that the Commission not modify its proposed rules in a way that restricts the MVDDS cell size in rural areas. As drafted, the proposed rules would permit MVDDS to flourish in rural areas, as the Commission's proposed EIRP limit for MVDDS in rural areas (which MDS America understands to be +50 dBw) will be higher than the limit proposed for urban areas. MDS America supports either of the Commission's proposed MVDDS interference protection criteria—whether measured as an incremental DBS outage of 2.86% per year or as an incremental DBS outage of 10 minutes per month—assuming that MDS America has correctly understood the Commission's proposed EIRP limits for MVDDS. The Commission should therefore avoid adopting an explicit carrier to interference ("C/I") ratio or any other technical parameters that prevent MVDDS from competing in rural (or urban) markets before a single system is built.

MDS America believes that the DBS industry has inappropriately attacked the 2.86% / 10 minute figures, although they are quite conservative. The irony, of course, is that the DBS industry is plagued by far greater outages from its own refusal to correct DBS signal fade due to

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weather attenuation. MDS America also respectfully writes to caution the Commission that its C/I calculation methodology, in Appendix H of the NPRM, contains language that has been superseded by the technical filings in this docket, including the MITRE report. MDS America suggests that this language be revised prior to the issuance of an order concerning MVDDS.

**ANY MODIFICATIONS TO THE PROPOSED MVDDS RULES SHOULD BE
CAREFULLY DRAFTED TO ENSURE MVDDS VIABILITY**

A major portion of the discussion in this docket has centered on the ability of MVDDS to co-exist with Direct Broadcast Satellite (“DBS”) systems without causing “harmful interference” to DBS operations. As the Commission stated in the NPRM, “harmful interference is defined under the Commission’s Rules as ‘interference which . . . seriously degrades, obstructs, or repeatedly interrupts a radiocommunication service. . . .’” See 47 C.F.R. § 2.1. However, DBS customers, without the deployment of a single MVDDS system, routinely experience service outages due to weather attenuation, known colloquially as “rain fade.” As a consequence of the common experience of rain fade, rather than in spite of it, the phrase *harmful interference* has come to mean, in the DBS context, “decrease in rain fade margin.” Thus, rather than meeting the traditional requirement of avoiding direct harmful interference to incumbent DBS operations, MVDDS providers are expected not to significantly increase the amount of outage time the DBS customer *already experiences* due to rain attenuation.

MDS America generally supports the Commission’s proposed MVDDS rules. MDS America only asks that in protecting DBS operations, the Commission refrain from adopting regulations that would prevent MVDDS deployment from a practical standpoint. First and foremost, as the Commission has already recognized, the C/I ratio between MVDDS and DBS operations is critical to MVDDS’ ability to share the 12 GHz band with DBS. The C/I ratio, whether adopted explicitly in the Commission’s rules, or implicitly as a consequence of other MVDDS technical requirements, will dictate whether MVDDS will be an economically viable competitor for provision of broadband services to rural America. This is so because the C/I ratio defines the size of an MVDDS transmitter’s coverage area, and the coverage area determines the number of customers served. The number of customers served then determines the return on investment that an MVDDS provider can expect for its system, and the return on investment is the deciding factor for MVDDS viability. As a consequence, the implicit or explicit C/I ratio for MVDDS, particularly in rural areas with lower population densities, is the crux of this proceeding.

MDS America has closely reviewed the text of the rules proposed by the Commission in the NPRM, and it appears that the technical parameters specified by the Commission will permit MVDDS to be deployed, as a practical matter, in rural markets. Again, as explained in greater detail below, MDS America is assuming that its interpretation of the MVDDS EIRP limits is correct. The Commission has not specified a particular C/I ratio for MVDDS in its rules at this time, and MDS America believes the current proposed rules are adequate to permit MVDDS deployment in rural areas. However, because certain parties to this proceeding have specified particular C/I ratios that would unnecessarily restrict cell size coverage, MDS America writes to respectfully caution the Commission against adopting additional technical restrictions, such as a

particular C/I ratio, that would have the effect of barring successful MVDDS deployment in rural areas.

THE IMPLICIT OR EXPLICIT C/I RATIO FOR MVDDS WILL DICTATE ITS ABILITY TO COMPETE WITH DBS IN RURAL MARKETS

Because one of the main proponents of MVDDS, Northpoint Technologies, Ltd. (“Northpoint”), has focused most of its efforts on wresting a multi-million dollar asset from the U.S. Government for free, its filings have obscured one of the main questions in this proceeding, a question that must be answered in order for MVDDS to be a viable competitor to DBS in rural markets: How does an MVDDS licensee pay for its rural systems? The Commission must satisfy itself that its technical rules do not become the central impediment to answering this question, or DBS will remain the only choice that most rural Americans have for video programming and Internet access services for the foreseeable future. As currently drafted, with some minor clarifications specified in greater detail below, MDS America believes that the Commission’s proposed MVDDS rules adequately accommodate rural system deployment. However, because certain parties to this proceeding have requested modifications to those proposed rules for various reasons, MDS America wishes to alert the Commission to the practical impediments such revisions would present to the deployment of MVDDS in rural areas.

Currently, in rural areas, most Americans have only one choice for the method of delivery of multichannel video programming—DBS. At present, there are two DBS providers, EchoStar and DIRECTV. However, these entities have proposed to merge, and if they are permitted to do so, there will be only one video programming provider for most rural Americans. With respect to Internet access, arguably even more important to rural American than video programming, the choices are even bleaker. Most rural Americans must settle for download speeds of 256 Kpbs, hardly broadband, and it is extremely unlikely that a single DBS provider would be motivated to improve this level of service.

The issuance of MVDDS licenses (with or without auctions) is not enough to ensure that MVDDS can compete with DBS. Any rural RF based system operating from towers must necessarily cover a large area to be economically feasible. The cell site coverage must be large enough to encompass a potential customer base that can, at a minimum, pay for the equipment; in addition, the average investor expects a reasonable profit. Economic viability—or lack thereof—is the very reason why coaxial cable systems have not been built out in rural areas.

Taking rural Wyoming as a worst-case scenario (population density, 1.6 people per square mile), it becomes easy to see what kind of coverage an MVDDS system would need. The operator must pay for a tower (or rent tower space) and must pay for programming, transmission equipment, Internet bandwidth, sales, service, taxes, and support, etc. Northpoint has stated in its press releases that it has developed a system using very cheap transmitters which would cover 100 square miles, and Northpoint also has stated that it would charge \$19.95 a month for the service. In Wyoming, the total population in a Northpoint cell would be 160 people. If every two people bought the Northpoint service (over 100% penetration, because there are probably more than two people per house) that cell would represent \$1,596 revenue for this cell per month or

\$19,152 per year for that cell. Even if the entire transmission system cost only \$10,000 (and MDS America estimates that the cost would actually be 20 times as much), that would require 25% of the revenue from the cell before paying for anything else. Perhaps the most astonishing consequence of these numbers is that a Northpoint system would not be economically viable *even if Northpoint receives its spectrum for free* (which of course, MDS America opposes for a long list of reasons). Such a system will never be built, regardless of the name of the licensee.

Therefore, for MVDDS to be deployed in rural areas, the systems will need to have large coverage areas, on the order of 8,000 to 10,000 square miles in rural markets. (In urban and suburban areas, high population density would permit much smaller cell sizes.) Cell sizes this large would allow for a target audience in Wyoming of 16,000 people and perhaps 5000 homes. Such coverage areas allow a rural system to be built and, more importantly, allow the operator to pay for it. Using more innovative types of masts or moorings, such as high altitude lighter than aircraft towers from T-Com, L.P. (based in Columbia, Maryland), even larger coverage areas could be achieved, making the probability of successful system deployment much greater.

However, if the Commission adopts a specific C/I ratio or other new technical rules that prevent MVDDS from being deployed in rural areas, the basic premise of MVDDS as a competitor in the video programming and Internet access market could be eliminated in one stroke. A restrictive, specific C/I ratio, whether adopted explicitly in the Commission's rules, or implicitly through other MVDDS technical requirements, will dictate the MVDDS cell size that can be deployed in such markets as rural Wyoming, South Dakota, and Nebraska. Again, cell size—*without* causing harmful interference to DBS operations—will dictate whether MVDDS can compete with DBS, or fail at the outset, leaving rural America out in the dark.

MVDDS SHOULD NOT BE PREVENTED FROM BECOMING A VIABLE COMPETITOR DUE TO DBS' EXISTING OUTAGE PROBLEMS

Competition in the provision of video programming is not as great as it could be, particularly in rural America. Rural Americans constitute a sizeable percentage of the viewing public, but they typically have only one choice for their video programming and Internet access service, DBS. DBS, however, is plagued by rain fade. As the Commission itself realizes, the DBS industry accepts rain fade as a necessary evil, rather than cause for serious concern and alarm. MDS America therefore feels that the definition of "harmful interference" has been greatly strained in this proceeding in order to accommodate DBS operators.

In the NPRM, the Commission lists rain outages of 108.8, 443.1, 1510, and 2165.5 minutes per year for Denver, Washington, Seattle, and Miami respectively. Again, the Commission has suggested that permitted MVDDS incremental outages above "normal" DBS rain fade would amount to 2.86% annually above these current levels, or 3.1, 12.7, 43.2, and 61.9 minutes, respectively. In MDS America's view, it is appalling that DBS rain outages of the measured magnitudes are considered routine, and that MVDDS technical rules must contemplate such outages as commonplace. When one considers that 13 to 15 million DBS subscribers experience between 9 minutes of outage per month (in arid Denver) and 180.5 minutes per month (in Miami) due to weather attenuation alone, *without* MVDDS, the possibility of

interference from MVDDS transmissions become a mere distraction, a red herring. Further, the record in this proceeding conclusively demonstrates that MVDDS systems can easily co-exist with DBS operations without causing harmful interference. Thus, the DBS industry has set MVDDS up as the strawman to become responsible for its own persistent weather outage problems, and suggests that the onus is on MVDDS supporters to prove them wrong.

The MVDDS proponents in this proceeding that are not tied to the DBS industry have stated repeatedly that MVDDS mitigation zones—*possible* zones of interference with DBS—comprise a small percentage, or less than 2%, of the total area covered by any MVDDS system. The planned MVDDS deployment in rural areas, with larger cell sizes, will shrink even this percentage of MVDDS service areas constituting possible mitigation zones. Thus, the DBS industry has chosen to focus all of the Commission’s attention on this tiny area that *might* be affected by MVDDS, again, less than 2% of expected MVDDS coverage.

Currently, DBS has between 15% and 17% of the multichannel video programming market. The Commission has assumed, as a baseline, that MVDDS might cause 10 minutes of DBS outage per month (an amount that MDS America’s systems would not cause in reality, but will be assumed for argument’s sake). This means that the contentiousness of this proceeding—between the DBS industry and MVDDS advocates—has been about 10 minutes of possible viewing time per month (out of a total of 43,200 minutes) for less than 2% of MVDDS system areas, or about 0.34% of the American viewing public. Again, given that DBS customers experience this much service outage—or much more—on a routine basis at the present time, MVDDS should not be prevented from becoming a viable competitor simply because DBS providers refuse to address their own rain fade problem.¹

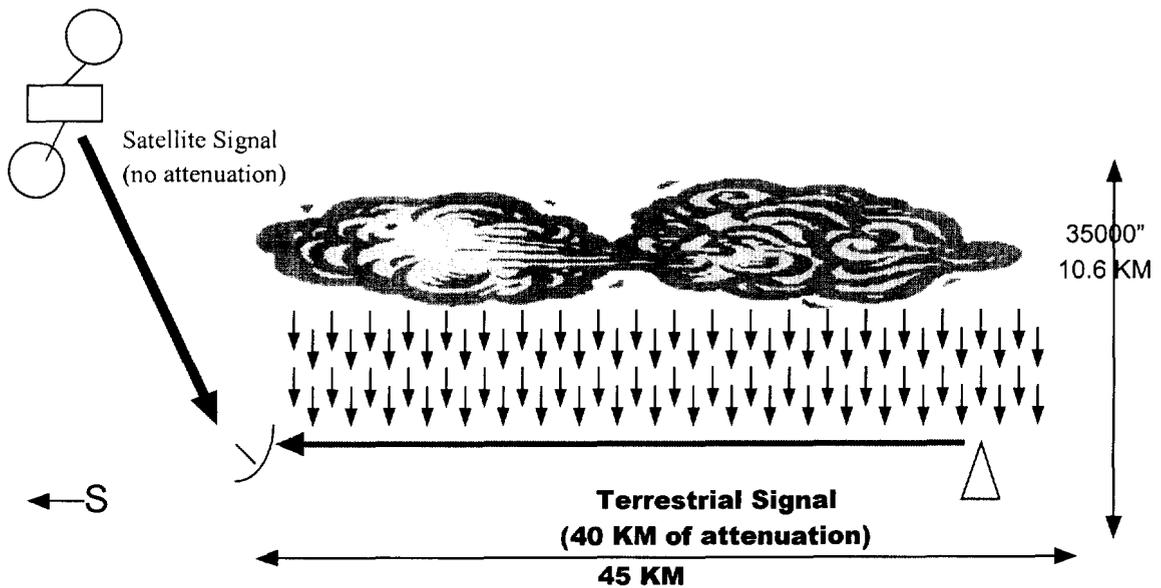
THE COMMISSION SHOULD BE CAUTIOUS ABOUT MODIFYING ITS PROPOSED RULES IN RELIANCE ON SUPERCEDED ASSUMPTIONS IN THE NPRM

MDS America recognizes that the Commission staff based the text of the NPRM, including Appendix H, “A Method of Converting Percentage of Unavailable Time into a Carrier-to-Interference Ratio,” on the information available to the Commission up to that time, including the information that Northpoint and the DBS industry had provided to the Commission. However, the importance of obtaining several points of view through the comment process has become particularly evident in this docket. Although it should not need to be said at this point, MDS America respectfully cautions the Commission against relying on certain technical assumptions contained in the text of the NPRM if it decides to revise its proposed MVDDS rules.

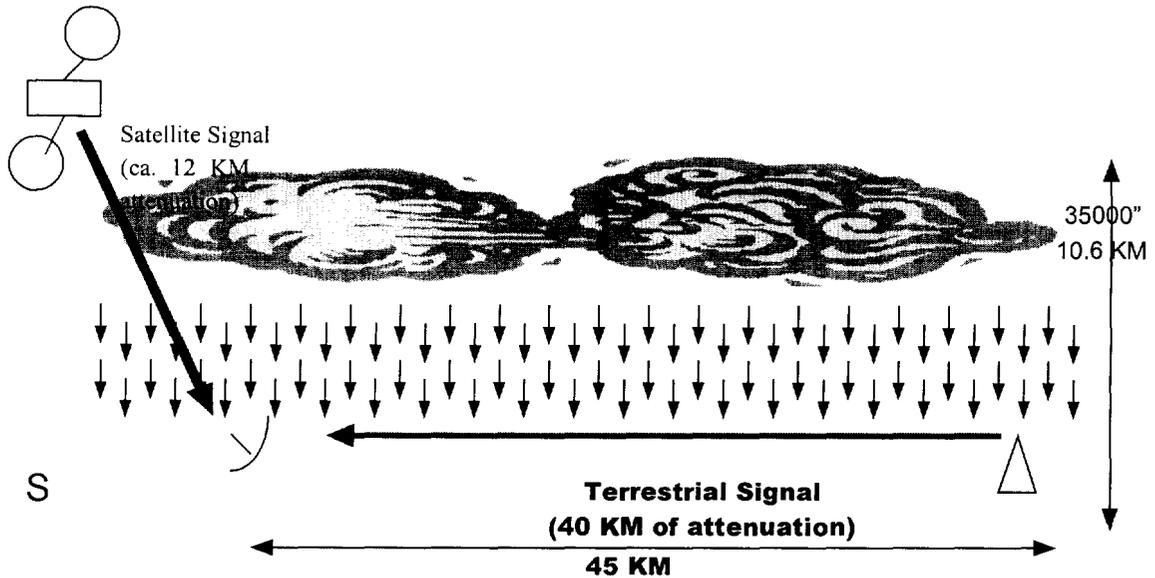
¹ Instead, MDS America predicts that DBS providers will correct rain fade as a direct result of healthy capitalistic factors, driven by the presence of a competitor in the marketplace—MVDDS. MDS America’s technology licensor, MDS International, has developed an inexpensive technology that decreases rain fade outages for DBS customers by more than 50%. MDS America does not at all suggest that the DBS industry should purchase this product. Instead, MDS America suggests that the DBS industry, which is far larger than MDS America and MDS International, is perfectly capable of developing its own inexpensive solution to the rain fade problem, but deliberately chooses not to at this time. A 50% decrease in rain fade in Miami would result in 18 hours of additional viewing time for Miami DBS customers.

The parties to this docket will recall that the original idea behind Northpoint, as embodied by its name, is that MVDDS systems would co-exist with DBS systems by transmitting generally from the north—DBS dishes being pointed toward the southwestern sky, with their back to the “north-pointing” transmitter. This assumption played a key role in the methodology described in Appendix H of the NPRM for the Commission’s rainy-sky C/I ratio for MVDDS. While MDS America supports either outage option specified in proposed Section 101.105 of the Commission’s rules (2.86% a year or 10 minutes per month), MDS America is concerned that the Commission might adopt certain language in Appendix H without revising that language to account for the additional technical submissions in this proceeding.

The methodology for calculating the rainy-sky C/I ratio specified in Appendix H to the NPRM relied on the assumption that in a typical satellite path, rain cells in the space-to-earth slant path would generally be to the south of the earth station location. As this theory played out, because the terrestrial interfering path generally would emanate from the north of the DBS earth station location, it would usually not be in the rain cell. Thus, the Commission assumed, based on the Northpoint concept, that at the time when a rain cell in the space-to-earth path attenuates a DBS signal, the terrestrial signal would not similarly be attenuated. Therefore, the C/I ratio, under this theory, is calculated without considering rain fade for the terrestrial signal. Below is a graphic depiction of this Northpoint scenario.



Situation with Northern Terrestrial Transmission and No DBS Attenuation



Situation with Northern Terrestrial Transmission and Minimal DBS Attenuation

However, MDS America respectfully submits that this theory has been proven wrong through the technical contributions in this docket since the issuance of the NPRM. First, the MITRE tests, borne out by MDS America's prior real-world experience, clearly demonstrated that MVDDS transmissions will *not* "generally emanat[e] from the north of the DBS earth station location." Further, even if "north-pointing" MVDDS transmitters were deployed widely, the Commission's assumption that the transmitter therefore "w[ould] not be in the rain cell" is, respectfully, equally incorrect. The two drawings above show how easy it would be for the terrestrial signal to be attenuated more than the DBS signal, and geometric considerations indicate that the terrestrial signal is *more* likely to be subject to rain attenuation in comparison to DBS, *not* less likely. Therefore, MDS America respectfully recommends that the language in Appendix H be adjusted to account for the MITRE report findings.

MVDDS MITIGATION OBLIGATIONS TOWARD DBS OPERATION

A number of parties to this docket have also weighed in concerning MVDDS operators' obligations to mitigate harmful interference to DBS systems. Based on MDS America's real-world experience, MDS America contributes the following points to this debate:

1. Mitigation at the DBS consumer site would be necessary only in rare, isolated cases.
2. Such mitigation cannot be done physically by MVDDS companies, because this would represent access to a customer by a competitor
3. The DBS industry has no incentive to conduct such mitigation, because this would also help a competitor.
4. Costs of necessary mitigation in these rare instances should be borne by the MVDDS (or NGSO) operator).
5. There must be safeguards to prevent DBS from "mitigating" a competitor out of business.

MDS America proposes the creation of a committee to review mitigation issues in a given geographic region. This committee could consist of representatives of each of the services sharing this band, with limited oversight from the Commission. A mitigation committee could serve several purposes. First, the committee would decide what action would be necessary when there is a customer problem. The committee could then select an independent local RF engineering firm to apply mitigation techniques if ever necessary. The committee would decide if the problem was due to MVDDS, using Commission guidelines, and allocate the costs of mitigation to the responsible party, whether MVDDS or NGSO, or to DBS if neither MVDDS nor NGSO transmissions are responsible.

MDS America realizes that this idea is somewhat novel and may have its own hurdles in its implementation. For this reason, MDS America supports the Commission in its preferences for handling interference issues in the 12 GHz band, as long as the Commission is very mindful that such disputes can drive nascent companies immediately out of business if not handled properly. For example, a process that punishes an innocent operator before being proven guilty, by requiring either a system shut down or a large outlay of funds in its defense during the pendency of the proceeding, will defeat potential competition entirely.

MINOR TECHNICAL PROPOSALS FOR THE MVDDS RULES

MDS America's chief concern is that the Commission ensure that its technical criteria for MVDDS are technology-neutral and that all those who wish to participate in this market are given the opportunity to compete on an equal footing. MDS America also believes that the Commission should adopt service rules that provide maximum flexibility to MVDDS, given its status as a new service. Again, MDS America generally supports the Commission's rules as written, with the important caveat that any modifications to these proposed rules carefully avoid restricting the MVDDS cell size in rural areas.

For example, MDS America supports the Commission's suggested interference protection criteria rule—either option (outages of 2.86% annually or of 10 minutes per month) being acceptable—in proposed Section 101.105 of the Commission's Rules. MDS America also prefers that MVDDS be licensed on a geographic area basis, as provided under option one of proposed Section 101.1401 of the Commission's Rules.

With respect to the suggested transmitter power limitations in proposed Section 101.113 of the Commission's Rules, MDS America understands this rule to provide for a standard rural EIRP of +50 dBw, and an urban EIRP of -17.5 dBw (or 12.5 dBm). MDS America reads the footnote to this rule, describing two exceptions to the urban EIRP, to only apply to urban areas, and MDS America respectfully suggests that this point be clarified further to avoid confusion later. Any other interpretation would appear to cause the exception to swallow the rule, and would prevent the successful deployment of MVDDS in rural areas.

Last, MDS America does not perceive any need to limit the antenna gains for MVDDS receive antennas. As long as MVDDS operators adhere to the C/I ratios and other technical

criteria set forth by the Commission, the parameters of the receive antennas should be irrelevant to protecting DBS from harmful interference.

CONCLUSION

The Commission has important choices to make in the public interest in this proceeding. Through MVDDS, the Commission can help to establish an important competitor to DBS in rural markets. The Commission also has the opportunity to ensure that rural Americans, for the first time, are able to access the broadband services long promised to them. However, the essential component to the promise of MVDDS is its economic viability. Thus, whether MVDDS can be deployed as a practical, rather than a hypothetical, service in rural America, greatly depends on the technical parameters that describe MVDDS operations. While MDS America is the first to acknowledge that incumbent DBS operations and customers should be protected, the Commission can easily achieve this goal while simultaneously ensuring that MVDDS is able to compete with DBS in the marketplace. However, if MVDDS cannot be deployed in rural areas due to unnecessary technical restrictions, all of the Commission's efforts will be for naught, and DBS, with all of its rain fade faults, will remain the only service option for rural America.

Respectfully submitted,



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Counsel to MDS America, Incorporated

cc: Kirk Kirkpatrick
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CERTIFICATE OF SERVICE

I hereby certify that on this 4th day of December, 2001, a true and correct copy of the foregoing was served via hand delivery (denoted by *) or first class United States mail, postage prepaid, on the following individuals:

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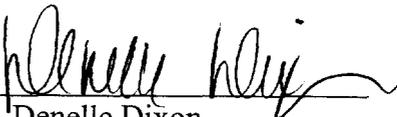
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