



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

December 20, 1996

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE



S00178496
SUPERFUND RECORDS

MEMORANDUM

SUBJECT: Final Report on the Review of the Times Beach Site

FROM: Robert J. Martin *RJM*
Director, Office of the Ombudsman

TO: Elliott P. Laws, Assistant Administrator
Office of Solid Waste and Emergency Response (OSWER)

Attached is the Final Report on the review of the Times Beach Superfund site.

The review of the site issues has comprised approximately six months of extensive time and effort on my part as I have worked with citizen groups and EPA Regional staff. This has consisted of site and community meetings, document reviews, phone interviews and multiple conference calls with Regional staff.

Significantly, many of the issues addressed within the Interim Report have been responded to by the Region and other major stakeholders in the Times Beach project or have been the subject of actions taken as discussed in the Final Report. I entrust the full and appropriate consideration of the recommendations in the Final Report to your leadership.

Attachments

cc: Timothy Fields, Jr.

OPTIONAL FORM 10 (7-90)

FAX TRANSMITTAL

of pages 30

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OFFICE OF THE OMBUDSMAN

FINAL

TIMES BEACH REPORT

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I. BACKGROUND

Affected citizens represented by the Gateway Greens Alliance, the Dioxin Incineration Response Group, and Citizens Against Dioxin Incineration (hereafter "petitioners") formally petitioned EPA Assistant Administrator Elliott Laws on April 30, 1996, to, among other requests, formally reassign their case from Dr. Dorothy Cantor, the OSWER Science Advisor, to the EPA National Superfund Ombudsman, Robert J. Martin because, in the opinion of petitioners, "Dr. Cantor cannot be impartial in her assessment of our evidence." The petitioners further requested "that Mr. Martin come to St. Louis to receive our evidence in a public forum; that Mr. Martin review our evidence; that Mr. Martin make his findings and recommendations on an emergency basis and that he make them available simultaneously to the public and to our Congressman, Jim Talent." (See, Petition letter of April 30, 1996, from GGA, DIRG and CADT to Assistant Administrator Elliott Laws. Appendix A).

Subsequently, Ombudsman Office Director Robert J. Martin met with citizens in St. Louis, Missouri, May 16, 1996, to hear petitioners' concerns and to begin a process to address their issues on the merits. Following this meeting, the Office of Ombudsman developed issues for the reply of EPA Region VII. The Region took the lead in responding to those issues in consultation with other parties to the Consent Decree for the Times Beach project, where appropriate. Those issues pertained to site characterization, assessment of risk, site operations and policy and community relations. He met once again with the petitioners in Frontenac, Missouri, on August 21, 1996, to hear any new information that they might raise in connection with the Eastern Missouri Dioxin Project.

Many issues which were raised by petitioners in the May and August meetings were addressed through written questions and answers which the Office of Ombudsman made available to petitioners. The Office of Ombudsman had additional dialogue with petitioners throughout the development of the Interim Report. The Interim Report was released for public comment by appropriate stakeholders and applicable EPA offices on November 20, 1996. This Final Report will touch on many of the issues raised by commenters, acknowledging responses where provided or actions where taken. The Office of Ombudsman recognizes that petitioners may disagree that a response has been provided or that an action has been taken and may, therefore, wish to preserve many issues for consideration in the future.

II. AUTHORITY

Two of the numerous commenters on the Interim Report, Agribusiness Technologies Inc. (hereinafter "ATI") and the EPA OSWER Science Advisor (hereinafter "Science Advisor") demonstrated confusion about the fundamental role of the EPA OSWER Office of Ombudsman in this case. The significance of this issue warrants the clarifying discussion that follows.

The Office of the Ombudsman was established by the Congress within Section 2008 of the Resource Conservation and Recovery Act. Section (a) of the law authorized the Ombudsman to "receive individual complaints, grievances, and requests for information submitted by any person with respect to any program or requirement under this Act." Subsection (b) authorized the Ombudsman to "make appropriate recommendations to the Administrator." EPA established the office in 1984 pursuant to the Congressional mandate. Following sunset of the mandate in 1989, EPA decided to make the Office of Ombudsman and its functions permanent because "Congress has chosen this solution for dealing with such problems in the hazardous waste programs EPA administers." (See, Hazardous Waste Ombudsman Handbook at pg. 1-1).

Thus, "[b]oth the statutory language and its legislative history confirm the importance Congress places on the public assistance functions of the Office of the Ombudsman. By centralizing these functions in the Office of the Ombudsman, Congress intended to improve EPA's responsiveness to the public with respect to the increasingly complex RCRA and Superfund programs the charge of the Ombudsman to provide assistance with problems, complaints or grievances, is an extremely broad one." (See, Handbook at pg. 2-2,3). Notably, the authority and framework of the Office of Ombudsman did not originate with EPA; EPA merely elected to make permanent an institution which the Congress had required in the law and for which the mandate had expired.

ATI has argued that the Ombudsman function has been a "nullity" since the Congressional mandate lapsed. EPA avoided this result by using its discretionary authority and making permanent the Congressionally authorized Office of Ombudsman thereby obviating the need for Congressional action to mandate this function again. The Science Advisor expressed a concern that "[t]he report does not indicate whether the duties and responsibilities of the Ombudsman were also broadened" as part of the EPA policy decision to make the function permanent and that this represents "a key point in judging the appropriateness of the activities undertaken by the Ombudsman in this matter." The duties and responsibilities of the Ombudsman are definitely equivalent to the charge of the function, as evidenced by the Ombudsman Handbook and other Agency documents.

The Science Advisor, along with ATI, further questioned the fairness and objectivity of the Ombudsman review of this case because direct contacts were allegedly not made with stakeholders other than the petitioners.

Assuming, arguendo, this point was true, the Science Advisor notes that "[i]f the role of the EPA National Superfund Ombudsman is to represent the interests of the concerned public and elevate issues to responsible EPA management for further review and possible action, then it does not matter if such contacts were not made." (See, Science Advisor Comments, Appendix D, pg. 2-3). This is in fact one of the defining characteristics of the Ombudsman, as "based on sound information gained through contact with the public, the Ombudsman may, on occasion, effect program adjustments in resolving particular problems." (See, Handbook at pg. 1-3). In point of fact, several parties were contacted directly. Moreover, the entire point of the comment period was to solicit information and each major stakeholder provided comments.

The Science Advisor also commented that the terms "case" and "findings of fact" were inappropriate for use in the Ombudsman report because they may only be used in a legal case and this is not a legal proceeding. This concern is well taken; however, it is squarely addressed by EPA guidance, in particular, and federal Ombudsman guidance, in general. The Office of Ombudsman has used a case system for over four years in administering the Ombudsman function. This is supported by the Ombudsman Handbook (See, pgs. 3-6, 8, 9). This system has influenced the method of operation of the EPA Regional Superfund Ombudsman. "Developing the case may involve facilitating among the parties. The recommended resolution may involve a substantial change in a response action or a decision previously made." (See, Memorandum of 10/10/96 from Dennis Grams, P.E. EPA Region VII Regional Administrator, to Elliott Laws, Assistant Administrator, OSWER).

Federal guidance also provides that "[i]f those complained against are not persuaded, the Ombudsman's recourse is to transmit findings in a report along with a recommended resolution [t]he report should speak with sufficient authority to be accepted by the body to which it is made and ultimately by the public." (See, "The Ombudsman: A Primer for Federal Agencies." The Administrative Conference of the United States, at pg. 6-7). Thus, use of the terms case and findings of fact are appropriate in this report.

This concern, among others, has served to raise broader issues of what the National Superfund Ombudsman function is and what it is not. ATI has misconstrued and misunderstood, for example, the role of the Ombudsman here. This is not a legal proceeding, such as one involving a grand jury of any kind. This is not a federal rulemaking. ATI has had as much time to comment

on the interim report as the petitioners have been allowed. This is also not a proceeding which seeks to contest, override or otherwise "derail the consent decree" which applies to the Eastern Missouri Dioxin Project. To the extent that ATI objects to any EPA decision made in reliance upon Ombudsman findings and recommendations, the dispute resolution provisions of the consent decree will apply.

Rather, the function of the Office of Ombudsman on this case is neither to confirm or deny the selected remedy of incineration nor is it to disrupt or itself effectuate the terms of the consent decree. The Office of Ombudsman is not issuing a second opinion on these matters but is, in the interest of promoting Agency responsiveness, erring "on the side of providing every possible assistance to the general public." (See, Handbook at pg. 3-3,4). ATI characterized the power of the Ombudsman here aptly in their comments by noting that the actions of the Ombudsman "can best be viewed as advisory". Seeking the assistance of an Ombudsman does not preclude any party from exercising any organizational or grievance rights. The Ombudsman may make recommendations, but is not an arbitrator and does not make unilateral or binding decisions.

A recent EPA memorandum best describes the function of the national Ombudsman and the network of Superfund Ombudsmen in the EPA Regions: "New and ongoing cases would be referred to the Regions based on the judgement of the National Ombudsman, not as requested by the Regions. Finally, all Ombudsmen, by the nature of their positions, are advisors considered to be outside of the decision chain, available to ensure that Agency decision processes are fair and equitable. This may entail critical examination of Agency policy or past decisions [t]he openness and accessibility of the Agency and the Superfund program reflected in the functions of the Ombudsmen are vital to the challenges they present as a means of making the strongest, fairest decisions." (See, Memorandum of 9/25/96 from Elliott Laws, Assistant Administrator, OSWER, to William Muno, Director, Superfund Division, EPA Region V).

This and other EPA and federal guidance confirms the notion of the Ombudsman as "a place to go, other than the courtroom" to achieve a "meaningful forum for stakeholder concerns" not only in EPA Headquarters but in the EPA Regions as well. (See, EPA Administrator Carol M. Browner comments on announcement of Regional Superfund Ombudsmen 10/2/95). Moreover, EPA has recognized that "[t]he Headquarters Ombudsman is lead on ... Times Beach." (See, Memorandum of 10/10/96 from Dennis Grams, P.E., Regional Administrator, EPA Region VII, to Elliott Laws, Assistant Administrator, OSWER).

Therefore, the Office of Ombudsman and the National Superfund Ombudsman functions are neither a legal nullity nor barred from considering the issues which the petitioners have raised with the EPA. The Science Advisor, the DNR and ATI have each questioned the impartiality of the review of the issues. It should be noted that each stakeholder had significant criticisms of the Ombudsman Interim Report. The comments, which are appended for public review, speak for themselves. Another view was expressed by a citizen with whom the Ombudsman did not meet. Michael F. Bollinger, an environmental professional who lives in a community affected by the Project, wrote that "the report is the first publicly available official document which references many of the issues raised by concerned citizens." While noting that "the report seems excessively moderate and conciliatory it still attempts to recommend some action to further investigate and resolve numerous legitimate issues." (See, Letter of Michael F. Bollinger to the National Superfund Ombudsman 12/4/96).

III. FINDINGS OF FACT

0 The contamination from Times Beach resulted from spraying roads for dust control in the 1970's with oil that was contaminated with dioxin. Initial soil samples were collected by EPA in 1982. In February of 1983, on the basis of an advisory from the Centers for Disease Control ("CDC"), EPA transferred \$33 million, under the authority of the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), to the Federal Emergency Management Agency (FEMA) to permanently relocate Times Beach residents and businesses.

0 The history of the other 26 Eastern Missouri Dioxin sites, the role of the significant stakeholders such as EPA, the State of Missouri and Agribusiness Technologies; and the selection of incineration as the remedy for the Eastern Missouri Dioxin Project are outlined with particularity in the Record of Decision and the Consent Decree between the parties.

0 The significant stakeholders have confirmed in the Consent Decree for the Eastern Missouri Dioxin Project that the incineration facility is to be used solely for the purpose of remediating the 27 identified dioxin sites and not for any other purpose in the future at the Times Beach location.

0 The Consent Decree is exhaustive in its specifications for the work to be performed in the Eastern Missouri Dioxin Project. (See, United States v. Bliss, 133 F.R.D. 559, 562. E.D. MO. 1990). The Consent Decree provides that "[a]ll work required shall be completed as required in the Work Plans." (See, CD at pg. 14).

9 The Consent Decree further provides that the term work plans "shall mean the detailed plans of work, as set forth in Attachments B through D, for implementation of the remedial design, remedial action, use restrictions and any required operation or maintenance of the remedial action at the sites. The parties agree that the work plans, which are incorporated and made an enforceable part of this Decree, reflect the requirements of the ROD, the National Contingency Plan (NCP), and relevant guidance documents." (See, CD at pg. 11-12).

9 The Consent Decree further provides that the "United States and the State agree that the work, if properly performed as set forth in the Work Plans, is consistent with the provisions of the National Contingency Plan pursuant to 42 USC 9605." (See, CD at pg. 39-40).

9 The Consent Decree further provides, with respect to quality assurance and sampling, that the "parties shall use quality assurance, quality control, and chain of custody procedures in accordance with the requirements of the Work Plans. Sampling data generated consistent with the quality control and chain of custody procedures set forth in the Work Plans shall be admissible as evidence, without objection as to authenticity, but without waiving any objections as to relevance or weight, in any proceeding under this Decree." CD at pg. 21.

9 The Thermal Treatment Workplan narrative provides, with respect to sampling and analysis protocols, that "[a]ll sampling techniques and analytical methods will be approved and detailed in the Trial Burn and Delisting Burn Plans [a]dditional information on sampling and analytical protocols is found in the Site Administration Workplan." (See, Thermal Treatment Workplan Narrative, at pg. 12-8).

9 The Site Administration Workplan narrative provides, with respect to packaging and delivery of samples, that "[s]amples will be identified and labeled to facilitate chain of custody and quality assurance. Each sample (individual container) will be given a unique identification. Each sample container will be sealed to help ensure sample integrity. Samples to be delivered to an analytical laboratory will be packaged and transferred in accordance with 40 CFR 261.4 (d)(2) (ii) to an appropriate delivery agent who will transport the samples to the analytical laboratory. All individuals taking possession of the shipment will be required to sign and date the chain of custody forms (see Appendix 3)." (See, Site Administration Work Plan narrative at pg. 76-77).

9 The Site Remediation Work Plan provides, with respect to packaging and delivery of samples, that "[a]ll samples will be properly identified and labeled. Each individual sample will be given a unique identification. Appendix 18 contains typical

sample labels. Each sample container will be sealed to insure sample integrity. Samples to be delivered to an analytical laboratory will be packaged and transferred, in accordance with all applicable regulations, including 40 CFR 261.4 (d) (2) (ii), to a delivery agent who will transport the samples to the analytical laboratory. Chain of custody procedures will be implemented to accompany the package of samples from the origin at the site to the analytical laboratory. All individuals taking possession of the shipment will be required to sign and date the chain of custody form, an example of which is included in Appendix 10." (See, Site Remediation Work Plan narrative at pg. 36-37).

0 40 CFR 261.4 (d) (2) (ii), cited above, reads in pertinent part: "(ii) Comply with the following requirements: if the sample collector determines that DOT, USFS or other shipping requirements do not apply to the shipment of the sample: (A) assure that the following information accompanies the sample: (1) The sample collector's name, mailing address and telephone number; (2) the laboratory's name, mailing address and telephone number; (3) the quantity of the sample; (4) the date of shipment; and (5) a description of the sample. (B) Package the sample so that it does not leak, spill or vaporize from its packaging."

0 The Consent Decree further allows for the performance of additional response actions, not otherwise specified in the decree or the Work Plans, if "the EPA finds based upon previously unknown conditions or information, in the context of the facts comprising the record, that the remedy may not be protective of public health, welfare or the environment, provided, however, nothing in this Section relating to reopening provisions will affect the standard of liability of settling defendants under CERCLA;". (See, CD at pg. 44-45).

0 Notwithstanding the provision cited above, the decree further provides that "the Administrator may only reopen upon a finding based upon the best scientific judgement available to EPA that unknown conditions or new information exist and that such new information or unknown conditions, in the context of the facts comprising the record, indicate that remedial action is necessary and appropriate to assure protection of the public health and the environment. Such action by the Administrator shall be subject to the Dispute Resolution provisions herein." (See, CD at pg. 47).

0 ATI has reported that approximately two-thirds of the soil contaminated with dioxin has been incinerated and that as many as seven sites remain to be excavated as of November 7, 1996. Sites which had not been excavated prior to the commencement of incineration were as the Missouri DOE noted, "an open threat to the health of citizens living or working in their immediate areas. In fact, potential exposures have occurred to

Missouri citizens during the last two years at these unexcavated sites. At those sites where excavation had occurred, the materials remained in storage, and at the mercy of an Act of God. Missouri is prone to tornadoes and unusual weather events which could potentially spread dioxin contaminated materials over a broad area." (See, ROD comments at pg. 3, Appendix K).

C The Times Beach ROD narrates that study results "concerning humans that have been exposed to herbicides and chlorinated chemicals containing dioxin as a contaminant indicate that excessive exposure leads to altered liver function, lipid metabolism and neurotoxicity. In addition, humans may develop the skin lesions chloracne and hyperpigmentation. (See, ROD at pg. 8).

D The ROD notes that during thermal treatment, "there would be a short-term potential for dust and particulate generation during materials handling and preparation activities. The potential for air releases of products of incomplete combustion also exists. Measures would be taken to ensure that all these potential hazards are controlled prior to full-scale operation." (See, ROD at pg. 19). EPA has also noted generally that "(d)ioxin may also be emitted from a hazardous waste incinerator as either a constituent in the feed that is not destroyed during the combustion process, or as a product of incomplete combustion that forms within the process train." (See, Memorandum from Henry L. Longest, Director, Office of Emergency and Remedial Response, 9/15/94. "Discussion of the Draft Dioxin Reassessment and Its Significance for Superfund Incineration Remedies.")

E The incinerator met the minimum 99.9999 percent DRE requirement for the designated principal organic hazardous constituents (POHC's), 1,2,4-trichlorobenzene and hexachloroethane. Each test result complied with the DRE requirement, and the average results from the three runs were 99.9981 percent for 1,2,4-trichlorobenzene and 99.999987 percent for hexachloroethane. (Trial Burn and Dioxin Stack Test Reports, IT Corporation, January 1996. Pg. 1-2.) Contemplated modifications to the final RCRA permit were made on March 15, 1996, and full-scale incineration operations were authorized to be commenced. (See, ATI comments, Appendix I).

F The ROD noted that full-scale implementation of on-site thermal treatment units at hazardous waste sites had been limited and that some such units had extended periods of downtime. The ROD specifically provided that "operation of a unit at Times Beach would also result in some extended downtime periods. The projected schedule for the cleanup of Times Beach does allow for 30 percent downtime. Downtime exceeding this allowance could delay the completion of thermal destruction of contaminated soils." (See, ROD at pg. 31).

0 The Dixia Monitoring Committee was created by the County Executive of St. Louis County, Missouri in 1991 for the purpose of monitoring the progress of the Times Beach Dixia Incineration Project. (Hereinafter the "DMC"). The DMC "does an outstanding job of tracking the Eastern Missouri Dixia sites cleanup and assuring compliance with the Federal Court Consent Decree." (See, Letter of Dennis Grams, P.E., Regional Administrator, EPA Region VII. 12/9/96).

0 The DMC voted unanimously on December 10, 1996, to immediately shut down "the Times Beach incinerator until stack tests are repeated and reports on that testing are completed." The DMC also voted to direct the Missouri DNR to "investigate the list of issues raised in the November 20, 1996, critique" of the DNR report on Times Beach "that was written by Citizens Paying Taxes and Attention (CPTAA)." The DMC also requested the St. Louis County Counselor to render an opinion "as to whether Quanterra violated Missouri State Statutes Section 351.125 and Section 351.510 by operating as a Missouri corporation while they were administratively dissolved by the Missouri Secretary of State on December 30, 1994, for failing to file their 1995 annual registration report with the State of Missouri." (See, letter of Richard R. Cavanaugh, CNE, Chairperson, to the Honorable Buzz Westfall, County Executive, St. Louis County. 12/10/96).

0 The DMC also requested on October 10, 1996, that "an additional air monitor be placed inside the ring levee, between the kiln and the slag drop area, adjacent to the secondary combustion chamber. The majority of the Monitoring Committee feels that this is needed because the public has observed dark smoke coming from this general location on occasion." (See, Letter of Buzz Westfall, St. Louis County Executive, to Dennis Grams, P.E., Regional Administrator, EPA Region VII). The EPA, after consultation with Missouri officials, did "not consider locating an additional air monitor inside the ring levee necessary for protection of public health." (See, Letter of Dennis Grams, P.E., Regional Administrator, EPA Region VII, to Buzz Westfall, County Executive, St. Louis County. 10/9/96).

IV. ACTIONS TAKEN

This section of the final report will touch on many of the issues raised by petitioners that have been addressed by the commenters or which have been the subject of actions that have already been taken by one of the significant stakeholders such as EPA, the State of Missouri, or ATI. The Office of Ombudsman recognizes that petitioners may disagree that a response has been provided or that an action has been taken and may, therefore, wish to preserve many issues for consideration

in the future. The Office of Ombudsman will retain jurisdiction until such time as the petitioners wish to foreclose discussion on specific issues, consistent with the policy of the Ombudsman on closing cases. For example, the Ombudsman Handbook provides that an "Ombudsman case is considered closed when all actions have been taken to resolve the problem and the person has been notified. The main concern in closing a case is being reasonably certain that the person is satisfied that the Ombudsman has addressed all problems." (See, Handbook at pg 2-10).

A. Health Issues

The Office of Ombudsman reflected within the Interim Report that petitioners felt that resolution of the issues surrounding the implementation of the Eastern Missouri Dioxin Project had consequences which were potentially life threatening. That statement merely reiterated the "fundamental issue of concern to local residents" framed by petitioners. That central issue was "whether or not incineration of dioxin contaminated soil at Times Beach will unnecessarily endanger the health of children, both born and unborn, as well as the general population. If we come to believe that the incinerator can be operated safely, our concern will be mitigated."

EPA Region VII (hereinafter the "Region") pointed out that "both the MDOH blood study and the ATSDR dioxin subregistry reports do not indicate any adverse impact on the local population by the project or the incinerator." (See, Region comments, pg. 1, Appendix B). The Region also pointed out that the Interim Report had incorrectly quoted an MDOH press release as "the average difference between the first and second round blood samples taken from study are participants is 0.05 ppt decrease." The November 7, 1996, press release issued by the MDOH states that "the average decrease for that group [study are participants] was .57 ppt. In comparison, the average TCDD concentrations in the comparison are for the first and second rounds are 1.43 and 1.38 ppt, respectively, with an average decrease of .05 ppt." Director Martin is grateful for the clarification and the record is so corrected in this final report.

MDOH correctly states that there is no relationship between the ATSDR baseline health effects report to the operation of the incinerator and that the conclusion of the MDOH blood study "serves to emphasize the lack of potential consequences to the health of citizens residing near the incinerator." (See, MDOH comments at pg. 3, Appendix B). The Office of Ombudsman also recognizes the position of MDOH that "[t]he RCRA permit does not require blood testing to be performed on affected persons there is no requirement in any document affecting the Times Beach incineration project that stipulates blood testing be done on affected persons. The blood study protocol was developed by the

DOH and submitted to the ATSDR for funding in 1994 as a response to concerns by Mr. Fred Striley about the incineration project. Thus, the dioxin blood study is an attempt by the DOH to determine a level of community exposure during the incineration process and to provide that information to the community as a response to concerns by one community member." (See, MDOH comments, pg. 3. Appendix H).

MDOH further comments that "[t]here are no studies on dioxin that conclude dioxin causes death in humans. In fact, the only acute health effect documented in the literature is chloracne; and this only at dioxin blood levels almost five (5) orders of magnitude higher than seen in the population currently living around the incinerator site." (See, MDOH comments at pg. 4. Appendix H). This seems inconsistent with the findings of the Record of Decision (ROD) for the Times Beach incineration project. The ROD notes that excessive exposure to dioxin, as outlined in the Findings of Fact, may also result in altered liver function, lipid metabolism and neurotoxicity. Therefore, although excessive exposure to dioxin may not cause death in humans, it may surely cause adverse health effects which are not discussed in the MDOH comments.

Petitioners have also argued that the blood study conducted by MDOH focused upon only a single kind of dioxin, 2378 TCDD, and neglected to consider the several different kinds of dioxin congeners which may be incinerated at the site. Furthermore, the petitioners have argued that the decrease in dioxin levels in the blood of those tested over the 18 month period is not credible given the "half-life" of dioxin in the body. Petitioners assert that the approximate half-life of dioxin in the body is seven to eleven years. Petitioners have secured independent technical opinions which support the proposition that it was "biologically impossible" for the dioxin levels in the blood sampled to have changed between the sampling periods. (See, technical comments of Citizens Clearinghouse for Hazardous Waste. 11/21/96. See also, opinion of Dr. Scheeter. 12/2/96).

MDOH also expressed an opinion in their comments that "[a]ll of the concerns and issues addressed in the Interim Report have been appropriately and thoroughly addressed " by the Times Beach Monitoring Committee. MDOH believes "given the institution of the Ombudsman and its delegated authority, there is no justification in following the recommendation of establishing a panel of technical and legal experts to consult with the Ombudsman.... For the expert guidance that the Ombudsman needs to consult on how to address the issues raised in this case in a final report, we recommend he review the monthly record of the Times Beach Monitoring Committee" to ascertain this knowledge.

The Office of Ombudsman has reviewed the written proceedings of the DMC in preparation for completion of this final report

and, agrees that establishment of an "independent panel" at this juncture of the Eastern Missouri Dioxin Project would not be appropriate. The Office of Ombudsman agrees with the finding of the Region and the DOH that the Monitoring Committee is an appropriate entity to track the implementation of the project and to ensure its consistency with the federal consent decree and applicable laws and regulations. The Monitoring Committee would also be an appropriate focal point to direct the opinions of technical and scientific experts to in the near future as issues need to be dealt with that prompt the involvement of citizens and other significant stakeholders.

Thus, in addition to the technical expertise of the significant stakeholders, already available to the monitoring Committee, independent expert peer review of issues raised by the petitioners or the Committee itself could be brought to bear, if deemed necessary by the Committee. The Science Advisor has proposed a useful model which could be adapted to this situation, if the process is acceptable to the Monitoring Committee. EPA established a process for an independent expert peer review of the draft risk assessment for the Waste Technologies Industries Inc. (WTI) hazardous waste incinerator in East Liverpool, Ohio. In the Fall of 1995 the EPA Risk Assessment Forum wrote to all relevant stakeholders requesting nominations of experts for participation in the peer review. Groups submitting nominations were instructed to provide resumes for all nominees and to verify that those persons did not have any conflicts of interest. The EPA Council of Science Advisors reviewed the resumes of the nominees without having access to their names and selected the panel on the basis of expertise in the identified disciplines. The peer review took place in January 1996 and was acceptable to stakeholders.

RECOMMENDATION

EPA should continue to work closely with the Monitoring Committee as an appropriate public entity to ensure the consistency of the Eastern Missouri Dioxin Project with the federal Consent Decree and applicable laws and regulations. If requested by the Monitoring Committee, then EPA should assure establishment of a procedure, acceptable to the Committee, for provision of independent technical review of issues raised by the Committee.

RECOMMENDATION

Missouri DOH should respond formally to petitioners arguments that the dioxin blood study is flawed because of the half-life of dioxin in the human body and because not all dioxin congeners were examined. To the maximum extent practicable

without violating confidentiality, DOH should also provide to the Monitoring Committee the data upon which the conclusions of the blood study were based.

B. Site Characterization Issues

1. PCB Sampling Data

The interim report recommended that EPA should provide detailed information on the depths at which PCB contamination was sampled for at the 27 sites to the petitioners. The Region, "[b]ased upon initial recommendations for the Centers for Disease Control, and further supported by an analysis performed by the contractor responsible for the Times Beach Multimedia Risk Assessment" felt that "the presence of low concentrations of PCB's that have been detected in soils at the eastern Missouri Dioxin sites are below a level of concern for protection of public health, regardless of depth." (See, Region comments at pg. 1. Appendix B).

This particular issue has been the subject of discussion in past Monitoring Committee meetings. On June 11, 1996, the Region indicated in a Monitoring Committee meeting that the depth information could be provided by examining the logs of the EPA On-Scene Coordinators for the 27 sites. The same information was requested once again, however, in Monitoring Committee proceedings on September 5, 1996. Petitioners alleged as late as November 7, 1996 that the priority pollutant data from the 27 sites had been mischaracterized and that the information on PCB depth sampling was still not available. The Office of Ombudsman appreciates the conclusion of the Region that the PCB depth information is not significant in the context of the risk assessment. Nevertheless, it would be useful to explain to the petitioners, the Monitoring Committee and the general public in the context of an EPA Fact Sheet why that it is the case. It would also be useful to include whatever basic data is available on PCB depth sampling from the OSC logs.

RECOMMENDATION

EPA should develop and distribute to the petitioners, the Monitoring Committee and the general public an EPA Fact Sheet which addresses the issue of why the presence of low concentrations of PCB's that have been detected in soils at the Eastern Missouri Dioxin sites are below a level of concern for protection of public health, regardless of depth. All available information on PCB depth sampling should be provided with the Fact Sheet.

2. Metatrace Data

The interim report recommended that EPA should fully explain how data furnished by Metatrace was used to characterize the dioxin sites and in particular, how that data was validated for use at the sites by following the criteria outlined in the EPA Memorandum of March 26, 1990. The Region commented that approximately 13 of the 27 sites had soil samples analyzed for rapid turnaround dioxin by Metatrace. The Region conducted their "own quality assurance, quality control program (QA/QC) to assure the quality of the data." (See, Region comments at pg. 2). The Region "retained the Metatrace data in the validated dioxin database for this project" because the data "was not relied upon solely for decision-making purposes at any of the involved sites in Region 7. In all cases, data from other contract laboratories, as well as data from Region 7's own laboratory, were used to support cleanup decisions. At all of the sites where Metatrace did contract lab work, the dioxin contaminated materials have been excavated and incinerated, or are in storage pending incineration." (See, Region comments at pg. 3. Appendix B).

RECOMMENDATION

EPA should develop an EPA Fact Sheet which describes how the Metatrace data, to the extent it was used to characterize the 13 dioxin sites, was validated for use at those sites by following the criteria outlined in the Memorandum from the Office of Emergency and Remedial Response of March 26, 1990. The Fact Sheet should be developed together by the Region and the Office of Emergency and Remedial Response. Particular detail should be given to the kind of QA/QC used, the identity of the difference laboratories used and other relevant data.

C. Risk Assessment Issues

The Office of Ombudsman agrees with the Region that the risk assessment evaluated the risks associated with operation of the incinerator and compared project risks to an incremental risk of 1×10^{-6} and that the degree of potential exposure is directly measured by the ambient air monitoring network. It is also recognized that EPA has now made public the revision to the risk assessment addressed by the Interim Report, which summarizes the operation of the Times Beach incinerator beyond 6000 hours. Moreover, the Region appears to have addressed the event of April 28, 1996 in which there occurred a non-heated ESTER event. See, EPA Current Operational Status and Combined Risk Presentation, June 4, 1996. The Region addressed the risk assessment issues of fugitive emissions and PIC formation in the Times Beach Multimedia Risk Assessment and in their comments to the interim report. (See, Region comments at pg. 4. Appendix B).

Petitioners may continue to take issue with the risk assessment, in general, and the possibility that the operation of the Times Beach incineration facility is causing the release of fugitive emissions and PIC's (products of incomplete combustion), in particular. In fact, one of the concerns of citizens, voiced in the August 21, 1996 meeting held in Frontenac, Missouri, was that mechanical operation of the incinerator near the slag drop area was causing the release of fugitive emissions and PIC's.

A key measure of the protectiveness of the Times Beach incineration project is the air monitoring network in place at the project. The Region believes that the ongoing air monitoring data shows that the incinerator is not having a discernible impact on airborne dioxin levels and that studies of potential risks associated with the project have confirmed that the project is protective of human health and the environment. (See, Region comments at pg. 4-5, Appendix B). Petitioners have consistently argued, however, that the placement of the monitors in the network will not serve to detect all significant emissions from the incinerator.

Apparently, this concern is also shared by the Monitoring Committee. As previously noted, the Monitoring Committee requested on October 10, 1996, that an additional air monitor be placed inside the ring levee, between the kiln and the slag drop area, adjacent to the secondary combustion chamber. The Committee felt this was needed because the public has observed "dark smoke" coming from this general location on occasion. Petitioners feel that the dark smoke represents fugitive emissions and PIC's from the incinerator. The Region, after consulting with the State of Missouri, denied the request for the new air monitor as not necessary to protect the public health.

RECOMMENDATION

A fair resolution to the matter would be to place the new monitor as requested by the Monitoring Committee. Although the existing monitoring network does not generally show any increase in airborne dioxin levels due to incinerator operation, the benefit of the doubt should be accorded to observations of the public. This would serve to augment the air monitoring program which is already in place. Further reliable data would then take the place of endless debate on the risk assessment, in general, and the air monitoring network, in particular.

D. Site Operations Issues

1. Maintenance Events

Petitioners expressed concern about the number of maintenance episodes at the Times Beach incineration facility

this year. Director Martin within the Interim Report asked ATI to explain the number of maintenance events which were not planned at the facility by date and those which were planned by date. ATI has since provided a monthly "Feed Suspension Log" which lists maintenance events by date with a brief explanation for the cause of each event. (See, ATI comments at pg. 29 and related attachments). ATI also assures that this information has been provided to the Monitoring Committee and will continue to be provided until the end of the project. Should petitioners wish additional information or a more clear explanation of the information which has been provided, then ATI should respond appropriately to petitioners.

2. Security Policies

Petitioners asked for an explanation of the security policies at the site after videotaping incidents had occurred which were discussed in the Interim Report. The Region explained one incident in which an individual had parked his car next to one of the EPA air monitoring stations. An EPA On-Scene Coordinator then "drove to the monitoring location and did record the license number of the vehicle. The Region believes this action to be appropriate given the importance of the air monitoring network." (See, Region comments at pg. 5, Appendix B). ATI has furnished "relevant portions" of their Standard Operating Procedures for Site Security Services. (See, ATI comments at pg. 31-32).

Should petitioners wish additional information or a more clear explanation of the information which has been provided, then ATI should respond appropriately to petitioners. The Office of Ombudsman also recommended within the interim report that a 24-hour voice mail number be established to narrate what activities are being undertaken at the site on a daily basis. ATI has accepted this recommendation. A 24-hour voice mail number "that describes what activities are being undertaken at the site on a daily basis, including whether or not any ESTER events have occurred, and whether the unit has been shut down for extended maintenance" will be established.

E. Legal Issues

1. Metatrace - Quanterra Allegations

Citizens have alleged that a direct relationship exists between the defunct Metatrace firm and the Quanterra firm which serves as a subcontractor on the Times Beach incineration site. The history of the Metatrace firm and the nature of the allegations made by petitioners are outlined within the interim report. The Missouri DNR investigative report addresses this issue. The report is appended in its entirety within Appendix F. The report concludes that "[t]here is a Metatrace connection." (See, MDNR

Report at pg. 10. Appendix F). The report concludes, however, that none of the 13 employees hired by Quanterra from Metatrace were involved in any of the prior wrongdoing of Metatrace and that "[n]one of the officers or directors shown on Metatrace reports were noted on the Quanterra reports." (See, MDNR Report at pg. 9. Appendix F).

2. IT - Quanterra Conflict of Interest

Petitioners have also alleged that a direct conflict of interest exists between IT Corporation, as prime contractor for the trial burn and dioxin stack test, and Quanterra, as the subcontractor for those functions of the project. The Consent Decree provides only that contractors be "under the direction and supervision of qualified personnel." (See, CD at pg.--). The MDNR Report found that "IT owned 50% of Quanterra shares at the time of the Times Beach Trial Burn/Dioxin Stack Test. However, there was little need for actions that would create a conflict of interest, as IT Corporation was already fully authorized to conduct all sampling activities, without having to call in an outside firm for assistance. The fact that IT owned stock in Quanterra, in and of itself, does not amount to evidence of wrongdoing. No evidence has surfaced to indicate any samples were compromised as a result of this business arrangement." (See, MDNR Report at pg. 9. Appendix F).

Nevertheless, MDNR did state that "International Technologies would have been better served by hiring a financially independent contractor, especially on a project this sensitive to the community." (See, MDNR News Release, 11/8/96). The Office of Ombudsman understands and appreciates that both EPA and MDNR have been providing significant oversight for all activities related to the incineration at the Times Beach site. However, as MDNR itself noted, this is a project which is extremely sensitive to the community. The allegations brought by petitioners and other citizens are significant and of a highly sensitive nature. They are not allegations which the Office of Ombudsman should substantively entertain, beyond a referral to appropriate offices within the EPA.

RECOMMENDATION

Following referral by the Office of Ombudsman, the EPA Office of Enforcement and Compliance Assurance and the EPA Office of Inspector General should consult with the Region and the Missouri DNR on the allegations which petitioners and other citizens have raised in order to assure the community that every appropriate method of investigation has been pursued. Due recognition should be accorded to the significant oversight of the Region and the State DNR at the site, in general, and to the DNR investigative report, in particular.

Finally, the interim report contained a recommendation that EPA formally convene a scientific dialogue between communities affected by Superfund incineration remedies and the Agency. This was based upon a request from the petitioners to establish such a dialogue, which petitioners felt did not exist. The Office of Ombudsman believes this remains an appropriate policy goal; however, for purposes of this final report it would be more meaningful to enhance that kind of communication between the petitioners, the EPA, the State of Missouri and ATI.

V. SIGNIFICANT ISSUES

A. Dioxin Stack Test and Applicable Chain of Custody

Petitioners alleged in the August 21, 1996, meeting with Director Martin and Regional and State officials that appropriate chain of custody protocol was not followed during the Dioxin Stack Test for the Times Beach incineration facility. The Interim Report notes that EPA and MOHA added the requirement of a Dioxin Stack Test as an additional safety measure. ATI correctly states that any further examination of the facts and the protocols surrounding this testing cannot disregard "the State's findings, which were predicated upon the State's review of the facts, the paperwork and the applicable consent decree and permit requirements." (See, ATI Comments at pg. 32, Appendix I).

Therefore, it would be useful to examine the meaning of those documents. First, the RCRA permit. The Region correctly notes that the RCRA permit "was an intensely negotiated provision of the Federal Consent Decree, notwithstanding it was not required by law. The parties to the Consent Decree agreed that this measure was appropriate to limit the project scope and duration and to allow for more public comment and participation." (See, Region Comments at pg. 6, Appendix B). The EPA Office of General Counsel (hereinafter "OGC") provided further clarification as to the exact meaning of the RCRA permit.

OGC noted that "[t]he Consent Decree which governs site cleanup; however, does require a "Hazardous Waste Management Facility Permit". At the State's request, all parties to the Consent Decree agreed to this permit in order to (1) ensure that the incinerator meets legal requirements that are applicable or relevant and appropriate and necessary to protect public health and the environment; (2) limit the duration of operation; (3) limit the materials to be incinerated to the specified 28 Bliss sprayed sites in Missouri; and (4) provide the public with opportunities, in addition to those required by CERCLA, to attend hearings and provide comments to the EPA and the Missouri Department of Natural Resources on the project. This permit was issued pursuant to CERCLA and the Consent Decree, and does not

carry with it any of the legal rights typically associated with a RCRA permit." (See, OGC Comments at pg. 3. Appendix C).

Thus, the proper focus of any examination is on the Consent Decree and CERCLA and upon any paperwork requirements which derive from those authorities. As noted in the Findings of Fact, the Consent Decree is exhaustive in its specifications for the work to be performed in the Eastern Missouri Dioxin Project. (See, United States v. Elix, 133 F.R.D. 559, 562). The Consent Decree provides that "all work required shall be completed as required in the work plans." (See, Consent Decree at pg. 14). The Consent Decree further provides that the term Work Plans "shall mean the detailed plans of work, as set forth in Attachments A through D, for implementation of the remedial design, remedial action, use restrictions and any required operation or maintenance of the remedial action at the sites. The parties agree that the work plans, which are incorporated and made an enforceable part of this Decree, reflect the requirements of the ROD, the National Contingency Plan (NCP), and relevant guidance documents." (See, Consent Decree at pg. 11-12).

The Consent Decree further provides, with respect to quality assurance and sampling, that the "parties shall use quality assurance, quality control, and chain of custody procedures in accordance with the requirements of the Work Plans". (See, Consent Decree at pg. 21). In addition, the Consent Decree further provides that the "United States and the State agree that the work, if properly performed as set forth in the Work Plans, is consistent with the National Contingency Plan pursuant to 42 USC 9605." (See, Consent Decree at pg. 39-40).

Under the terms of the Consent Decree, therefore, the provisions of the Work Plans and the National Contingency Plan provide a firm legal basis for the application of the quality assurance protocols required for the Dioxin Stack Test. The Region has provided the narratives for the Workplans. The Thermal Treatment Workplan Narrative provides, with respect to sampling and analysis protocols, that "all sampling techniques and analytical methods will be approved and detailed in the Trial Burn and Delisting Burn Plans [a]dditional information on sampling and analytical protocols is found in the Site Administration Workplan." (See, Thermal Treatment Workplan Narrative, at pg. 12-8).

The sampling and analytical protocols for thermal treatment work, therefore, are controlled by the provisions of the Site Administration Workplan. That Workplan narrative provides, with respect to the packaging and delivery of samples, that "samples will be identified and labeled to facilitate chain of custody and quality assurance. Each sample (individual container) will be given a unique identification. Each sample container will be sealed to help ensure sample integrity. Samples to be delivered to an analytical laboratory will be packaged and transferred in

accordance with 40 CFR 261.4 (d) (2) (ii) to an appropriate delivery agent who will transport the samples to the analytical laboratory. All individuals taking possession of the shipment will be required to sign and date the chain of custody forms (See Appendix 3)." (See, Site Administration Work Plan narrative at pg. 76-77).

The focal point of the MDNR investigation into the quality assurance and chain of custody protocols applicable to the Dixie Stack Test was the RCRA Permit application for the Times Beach Remediation Project and the EPA Handbook on QA/QC Procedures for Hazardous Waste Incineration (EPA/625/6-89/023) "to determine what procedures are recommended for Chain-of-Custody." (See, MDNR Investigation Report at pg. 2). The MDNR concluded that the permit had established "only general guidelines specifying that IT personnel would be responsible for sample custody and traceability and that upon sample receipt at the laboratory, the laboratory coding technician would sign and date the original custody form. (Attachment #1, Times Beach Custody Procedures)." The MDNR relied upon the statement in the EPA Handbook that "Chain of Custody (COC) is not required for trial burns; however the permit applicant may choose to use COC procedures."

Based upon these provisions, MDNR concluded in its investigation that "Quatterra, serving as part of the I.T. sampling team, would only have to sign the Chain of Custody form when they "relinquished" the samples to the designated laboratories, provided samples were secured and maintained at all times by a member of the sampling team." See, MDNR Report at pg. 2. Appendix F.

These provisions were superseded by the provisions of the Consent Decree, the Workplans and the MCP. As discussed above, the controlling provisions of the Workplans required with respect to packaging and delivery of samples, that "[s]amples will be identified and labeled to facilitate chain of custody and quality assurance. Each sample (individual container) will be given a unique identification. All individuals taking possession of the shipment will be required to sign and date the chain of custody forms." (See, Site Administration Workplan narrative pg. 76-77).

Viewed in this context, the findings of the MDNR investigation are troubling. The report notes that "[a]gain, Mr. Kaefer does not recall if samples were recorded as "relinquished" to Mr. Anderson on the Request for Analysis/Chain of Custody forms, but he again stated he did not feel it necessary as members of the sampling team worked so closely together." (See, MDNR Report at pg. 4. Appendix F). The report also notes that Ms. Lihner, a member of the sampling team, "does not recall if the samples were recorded as "relinquished" by her to Mr. Anderson, but she

thinks they were." (See, MDNR Report at pg. 5). The report also notes that "[s]he does not know when Mr. Anderson assumed custody of the samples nor she does she know if Mr. Keever recorded on the Chain-of-Custody that he had "relinquished" samples to Mr. Anderson." (See, MDNR Report at pg. 5. Appendix F).

The Report also noted the following "significant discrepancies": "(1) Dioxin stack test samples were delivered to Knoxville by Mr. Keever and Ms. Lishner, but chain of custody forms show only William C. Anderson of Quanterra as having been in control of the samples until their arrival at Triangle Laboratories on November 27, 1995. It has already been established that William Anderson was not present at Times Beach when the samples were collected. (2) A notation of chain of custody form by Mr. John Guenther, Sample Custodian for Triangle Laboratories, indicates samples B-1180 and B-1181 were not found in the shipment. He then notes he did find sample D-1180. There was nothing to indicate that he found sample D-1181. This notation was found while reviewing the Dioxin Stack Test Report, Volume 2, Appendix D. Later, while reviewing Volume 3, Appendix G, of the same report, a notation was added showing sample D-1181 had been received. This would indicate someone had added the notation after a copy of the chain of custody form had been returned to Mr. Anderson." (See, MDNR Report at pg. 5. Appendix F).

Compelling explanations have been offered by IT Corporation, Quanterra and Triangle Laboratories for the discrepancies and the lack of chain of custody paperwork, and in addition, MDNR's interpretation as cited within their Report is that "it can be argued that Quanterra conformed to the general guidelines established in Section 7.5, Request for Analysis/Chain of Custody, Dioxin Stack Test Plan." (See, MDNR Report at pg. 7. Appendix F). However, the Report also noted that "Chain of Custody documentation procedures utilized by Quanterra personnel were less than satisfactory according to the more stringent requirements established both by the MDNR, and Quanterra itself." MDNR also acknowledged that the "sample handling documentation employed by Quanterra was not the best" and that "the paper trail detailing the shipment was lax." (See, MDNR Report at pg. 1. Appendix F).

ATI has taken the position, in reliance on the EPA Handbook provision that does not require chain of custody in trial burns, "that no chain of custody requirements applied to these activities." (See, ATI Comments at pg. 31. Appendix I). This is simply not the case. Not only do the quality assurance and chain of custody protocols required by the Consent Decree and the Workplans apply to the packaging and delivery of the samples, but also all EPA requirements in the National Contingency Plan and the relevant guidance documents relating to those protocols. (See, Consent Decree at pg. 11-12).

For example, EPA has established guidelines for Superfund enforcement lead sites to provide uniform tracking mechanisms and to ensure that problems with quality assurance and chain of custody protocols do not arise. OSWER Directive 9340.6-2B, Extending the Tracking of Analytical Services to Potentially Responsible Party-Lead Superfund Sites (July 6, 1992), applies "to all PRP-lead site work (Removal, Remedial Investigation and Feasibility Study (RI/FS), Treatability Study, Remedial Design and Remedial Action (RD/RA), etc.) where oversight is funded by Superfund and where an oversight assistant (including contractors, U.S. Army Corps of Engineers or similar service) is providing or participating in the oversight." (See, OSWER guidance at p.2). Moreover, the EPA Users Guide to the Contract Laboratory Program (540/P-91/002) provides that "In accordance with Agency enforcement requirements, official custody of samples must be documented from the time of collection until the time of introduction as evidence during litigation." (See, CLP Guidance at p. 24). These requirements need to be followed in order to ensure that CLP quality data results are generated.

Finally, the National Contingency Plan, within Section 100.435 (b) (1), encourages consistency between the QA/QC of RI/FS and RD/RA samples taken for the purpose of cleanup action levels. The NCP provides that "EPA has decided that the QA/QC requirements for cleanup action level samples under the RI/FS generally should also apply to those taken during the RD/RA." (See, 35 Fed. Reg. 8735, March 8, 1970). This means that the same quality assurance and chain of custody protocols that were used to determine action levels in the RI/FS must also be used in the RD/RA, which in this case included a Dioxin Stack Test as a prelude to full scale commencement of the thermal treatment unit.

The quality assurance and chain of custody protocols for the Times Beach Dioxin Stack Test relating to packaging and delivery of samples to the laboratory displayed a noticeable departure from the standard procedures implemented at the majority of Superfund sites where chain of custody and CLP are strictly followed. For example, EPA guidance provides that, as a general rule, all samples should be shipped through a reliable commercial carrier. (See, EPA/P-91/002 at p. 26). Adherence to this particular guidance as well as the NCP requirements relating to quality assurance maximizes the reliability of data, minimizes potential errors and serves to eliminate potentially suspicious circumstances. Deviating from standard protocol raises many questions, many of which become subject to interpretation. (See, MDNR Report, ps. 1-8, Appendix F).

It has also been argued that the Work Plans could not have specified quality assurance and quality control procedures to be followed during the Dioxin Stack Test because the OSW National Combustion Strategy policy that recommends a Dioxin Stack Test was developed after the Consent Decree. The Region has also commented that there are "still no EPA guidance or policy documents that specify procedures, or quality assurance, quality control requirements for a Dioxin Stack Test. Procedures for the Dioxin Stack Test at Times Beach are controlled only by the Dioxin Stack Test Plan that appears in volume 10 of the consolidated RCRA permit application." (See, Region Comments at pg. 6. Appendix B).

This argument runs against a clear reading of the Consent Decree, the Work Plans and the logic of the National Contingency Plan. Even if no Dioxin Stack Test was envisioned at the time the Consent Decree was entered, the Decree expressed a clear requirement in the Thermal Treatment Work Plan with respect to operation of the Thermal Treatment Unit that "sampling techniques and analytical methods" would be detailed in the "Trial Burn and Delisting Burn Plans" and that "information on sampling and analytical protocols is found in the Site Administration Workplan." The Site Administration and Site Remediation Work Plans are, in fact, remarkably similar and both provide for proper identification and labeling of samples while being packaged and delivered.

Each sample is also to be provided a "unique identification" and is to be subject to chain of custody protocols that involve each person taking possession of the shipment of the samples being required to sign and date the chain of custody forms. These provisions of the Work Plans also permit IT Corporation and Quanterra to transport the samples directly to the laboratory, so long as, among other requirements, information pertaining to the quantity and description of the samples is included with the shipment.

As previously discussed, the National Contingency Plan demands consistency between quality assurance for samples taken at each juncture of a superfund cleanup, whether involving site characterization activities or remedial action activities for the purpose of meeting cleanup action levels. The language and requirements of the Consent Decree and the Thermal Treatment Unit, Site Administration and Site Remediation Work Plans are consistent with each other and with the logic of the National Contingency Plan for consistency in all phases of a cleanup involving quality assurance and chain of custody protocols.

Therefore, since the RCRA permit, standing alone, "does not carry with it any of the legal rights typically associated with a RCRA permit" because it "was issued pursuant to CERCLA and the Consent Decree" (See, OGC Comments at pg. 3, Appendix C); it is logical to assume that the quality assurance and chain of custody protocols specified in the Work Plans and the National Contingency Plan take precedence. The quality assurance provisions and chain of custody protocols in the Dioxin Stack Test Plan derive from those authorities and must be consistent with all other EPA directives and guidance on those matters.

The Office of Ombudsman is not finding that the dioxin stack test data is necessarily invalid or that criminal misconduct has occurred. However, the type of quality assurance and chain of custody protocols normally followed by EPA in a superfund cleanup were not followed in the Times Beach Dioxin Stack Test for purposes of the packaging and delivery of the samples. This goes directly to the weight to be accorded to the dioxin stack test data. As previously discussed, standard "relinquished by-accepted by" chain of custody paperwork for each person handling the samples was not followed and the person who collected the samples was not the person who delivered them to the laboratories.

Moreover, samples were mislabeled and misplaced so that by the time they reached the laboratory the "unique identification" required for each sample in the Work Plans and the associated information as to the quantity and description of the samples required by 40 CFR 261.4 (d) (2) (ii) may have been compromised. The chain of custody represents a critical link between the sampling and the analysis of the stack test samples. Any inconsistency in these documents as to labeling or otherwise, represents a lack of quality assurance in the highest degree. This lack of quality assurance is of the greatest importance from a health perspective since the actual amount of dioxin emitted from the stack, as measured in the Dioxin Stack Test data, has already been compared to the analysis performed in the risk assessment to determine if the actual emissions are protective of human health.

Although the existing air monitoring network supports that the incinerator is having no discernible impact on airborne dioxin levels, the best source of direct evidence represented by the dioxin stack test data carries less weight because of the lack of quality assurance surrounding the chain of custody for the packaging and delivery of the dioxin stack test samples. Again, Mr. Bollinger, an environmental professional with over 20 years of experience in the fields of environmental chemistry and public health, with whom the Ombudsman has had no direct contact, offered this insight to the Office of the Ombudsman in connection with the Dioxin Stack Test and chain of custody issues: "the numerous cited issues indicate either incompetence,

blatant carelessness, or potentially criminal deception on behalf of the sampling and analytical contractors. Over 15 years ago I [was] routinely using and adhering to chain of custody and other basic "Good Laboratory Practices" on numerous sampling projects- all far less controversial and significant than the Times Beach Superfund site.

The explanations offered by ATI and thus far readily accepted by DNR and EPA are grossly inadequate. Examples.... include those for modified QA records, missing time periods, unaccounted for sample traps, and a lack of documentation on possession and transfer of samples the Dioxin Stack Test should be repeated solely in light of the extensive evidence presented to date A re-test would also provide an opportunity to modify the protocol to also measure the concentration of dioxin in the waste being fed to the thermal treatment unit. The oversight in the original test ensured that a true Destruction and Removal Efficiency could not be calculated. As a result, no one really knows how efficient or effective the unit is at removing actual contamination from the soil. Such data.... has the potential to definitively demonstrate the efficacy and consequently, the safety of the thermal treatment unit. This may be the only option to restore public trust." (See, Letter from Michael P. Bellinger, December 4, 1996).

OCG provided useful criteria for determining whether to proceed with an additional stack test. "Although loss of public confidence may be one factor to consider, presumably a decision to conduct an additional test will also be based on a determination that, among other things, there are significant problems with the original test, that an additional test would provide significant relevant information unavailable through other means, and that the cost of an additional test is not unreasonable." (See, OGC Comments at pg. 2, Appendix C).

Clearly, there were significant problems with the original test related to significant deficiencies associated with the chain of custody for the packaging and delivery of the Dioxin Stack Test samples. An additional test would provide significant relevant information on actual removal of dioxin contamination from the soil which may not otherwise be available from other means. Finally, the Environmental Response Team of the EPA has advised the Office of the Ombudsman that to repeat a stack sampling event would not require a shutdown of operations, unless that is a contractual requirement. For a single operating condition, 3 runs for a list of parameters approximating the original parameters for the facility could be completed in 3 days. Addition of other operating conditions would increase the test by two to three days for each condition added. On a quick turn around basis, results could be obtained back from the laboratory in seven to ten days. We understand the cost of a new test would be approximately \$100,000. This is not

an unreasonable cost in proportion to the magnitude of the Eastern Missouri Dioxin Project which is near \$100 million dollars.

ATI has pointed out that there are "many practical problems with requiring an additional Dioxin Stack Test. A Dioxin Stack Test is a complicated test that cannot be undertaken successfully without adequate advance preparation. The contractor, understandably, will not want to perform such an important test while regular operations are on-going." (See, ATI Comments at pg. 33. Appendix I). The Region has indicated that "[i]f financial, access, and health and safety considerations were resolved, a sampling team could be tasked to perform a Dioxin Stack Test by collecting a representative sample from the incinerator emissions and analysing for the seventeen dioxin congeners of interest." (See, Interim Report. Appendix A. pg. 4).

The Office of Ombudsman by its very nature cannot become deeply embroiled in the legal and technical fine points of another Dioxin Stack Test. In view of the significant problems associated with quality assurance [relating to chain of custody for the packaging and delivery of the original Dioxin Stack Test samples] which may not have satisfied the requirements of the Work Plans and the applicable rules, however, the Office of the Ombudsman has no discretion to recommend continued operation of the Times Beach incinerator without benefit of another Dioxin Stack Test.

RECOMMENDATION

EPA should perform a new Dioxin Stack Test immediately at the Times Beach incineration facility. The EPA Environmental Response Team and EPA Region VII, together with Missouri DNR, ATI and the Dioxin Monitoring Committee should collaborate on the conditions for a new test as soon as possible. The Environmental Response Team, the Region and the DNR will assure compliance with all quality assurance requirements. The Monitoring Committee and petitioners should agree on a qualified technical advisor who can independently assess the new Dioxin Stack Test on their behalf.

Concerns have been expressed about the effect a new Dioxin Stack Test would have on excavation efforts at the remaining seven sites in the Eastern Missouri Dioxin Project because of the potential for lack of storage space at the site for additional contaminated soils. The Office of Ombudsman agrees that this is a valid concern, however, the Region should confirm exactly how many sites still require excavation. According to recent proceedings of the Monitoring Committee, at least two sites of the remaining seven sites may not require excavation.

If, following assessment of this problem by the Region, this becomes a significant health and safety issue, then the Environmental Response Team should assist the Region to implement additional prudent and short-term measures to secure the remaining sites pending completion of the new test.

VI. CONCLUSION

Petitioners did offer evidence to support a concern that the quality assurance relating to the chain of custody for packaging and delivery of samples from the original Dioxin Stack Test may not have been in compliance with the Work Plans and the applicable rules. Petitioners request for a review by the Office of the Ombudsman of the Times Beach case was necessary and proper. Because the Office of Ombudsman cannot address directly allegations of wrongdoing which petitioners have raised, Director Martin will be referring those complaints to the EPA Office of Enforcement and Compliance Assurance for any appropriate action. He expects that appropriate deference will be extended to the Missouri DNR investigation of the matters raised by citizens if any further investigation is conducted.

It is in the best interest of the public that the dioxin contamination at the former city of Times Beach and the 26 other sites in Eastern Missouri is being addressed by EPA, the State of Missouri DNR. All involved are well served by an expeditious but safe remediation the efficacy of which is verifiable to citizens. The Office of Ombudsman recognizes that the EPA and the State of Missouri have already taken significant measures in the RCRA permit and otherwise, to protect the health of nearby residents affected by the Times Beach incinerator.

The Office of Ombudsman entrusts to the leadership of EPA, the State of Missouri and ATI the full and fair consideration of the recommendation for a new and immediate Dioxin Stack Test as well as the other recommendations in this report. Petitioners do reflect the concern of many citizens that the incinerator must be operated safely in a manner which is verifiable to citizens. The best way to mitigate these concerns is to work directly with citizens to demonstrate that the incinerator can indeed address the dioxin contaminated soils in accordance with requirements imposed by the EPA and the State of Missouri. There may be short term costs associated with such a demonstration in a new Dioxin Stack Test, however, the long term benefits in public confidence are enormous.