ATTACHMENT

4.4.E. 40 CFR PART 149 - SOLE SOURCE AQUIFERS, SUBPART B - REVIEW OF PROJECTS AFFECTING THE EDWARDS UNDERGROUND RESERVOIR, A DESIGNATED SOLE SOURCE AQUIFER IN SAN ANTONIO, TEXAS AREA AND CRITERIA FOR INTERPRETATION FOR SECTION 1424(E) REVIEW BY USEPA STAFF
40 CFR PART 149 - SOLE SOURCE AQUIFERS, SUBPART B - REVIEW OF PROJECTS AFFECTING THE EDWARDS UNDERGROUND RESERVOIR, A DESIGNATED SOLE SOURCE AQUIFER IN SAN ANTONIO, TEXAS AREA AND CRITERIA FOR INTERPRETATION FOR SECTION 1424(E) REVIEW BY USEPA STAFF

USEPA has not issued a final rule regarding project review criteria in Sole Source Aquifer Areas (the proposed rule noticed in the 9/29/77 Federal Register was never finalized). 1990 FHWA guidance requires the use of 40 CFR Part 149, Subpart B in reviewing projects in Sole Source Aquifer Areas that require a commitment of Federal Financial Assistance.
Subpart B—Review of Projects Affecting the Edwards Underground Reservoir, A Designated Sole Source Aquifer in the San Antonio, Texas Area


§149.100 Applicability.

This subpart sets forth, pursuant to sections 1424(e) and 1450 of the Public Health Service Act, as amended by the Safe Drinking Water Act, Pub. L. 93-523, regulations relating the Edwards Underground Reservoir which is the sole or principal drinking water source for the San Antonio area and which, if contaminated, would create a significant hazard to public health.


§149.101 Definitions.

As used in this subpart and except as otherwise specifically provided, the term(s):

(a) Act means the Public Health Service Act, as amended by the Safe Drinking Water Act, Public Law 93-523.

(b) Contaminant means any physical, chemical, biological, or radiological substance or matter in water.

(c) Recharge zone means the area through which water enters the Edwards Underground Reservoir as defined in the December 16, 1975, Notice of Determination.

(d) Administrator (Regional Administrator) means the Administrator (Regional Administrator) of the United States Environmental Protection Agency.

(e) Person means an individual, corporation, company, association, partnership, State, or municipality.

(f) Project means a program or action for which an application for Federal financial assistance has been made.

(g) Federal financial assistance means any financial benefits provided directly as aid to a project by a department, agency, or instrumentality of the Federal government in any form including contracts, grants, and loan guarantees. Actions or programs carried out by the Federal government itself such as dredging performed by the Army Corps of Engineers do not involve Federal financial assistance. Actions performed for the Federal government by contractors, such as construction of roads on Federal lands by a contractor under the supervision of the Bureau of Land Management, should be distinguished from contracts entered into specifically for the purpose of providing financial assistance, and will not be considered programs or actions receiving Federal financial assistance. Federal financial assistance is limited to benefits earmarked for a specific program or action and directly awarded to the program or action. Indirect assistance, e.g., in the form of a loan to a developer by a lending institution which in turn receives Federal assistance not specifically related to the project in question is not Federal financial assistance under section 1424(e).

(h) Commitment of Federal financial assistance means a written agreement entered into by a department, agency, or instrumentality of the Federal Government to provide financial assistance as defined in paragraph (g) of this section. Renewal of a commitment which the issuing agency determines has lapsed shall not constitute a new commitment unless the Regional Administrator determines that the project’s impact on the aquifer has not been previously reviewed under section 1424(e). The determination of a Federal agency that a certain written agreement constitutes a commitment shall be conclusive with respect to the existence of such a commitment.

(i) Streamflow source zone means the upstream headwaters area which drains into the recharge zone as defined in the December 16, 1975, Notice of Determination.

(j) Significant hazard to public health means any level of contaminant which causes or may cause the aquifer to exceed any maximum contaminant level set forth in any promulgated National Primary Drinking Water Standard at any point where the water may be used for drinking purposes or which may otherwise adversely affect the health of persons, or which may require a public water system to install additional treatment to prevent such adverse effect.
(k) Aquifer means the Edwards Underground Reservoir.


§ 149.102 Project review authority.

(a) Once an area is designated, no subsequent commitments of Federal financial assistance may be made to projects which the Administrator determines may contaminate the aquifer so as to create a significant hazard to public health.

(b) The Regional Administrator is hereby delegated the authority and assigned responsibility for carrying out the project review process assigned to the Administrator under section 1424(e) of the Act, except the final determination that a project may contaminate the aquifer through its recharge zone so as to create a significant hazard to public health.

(c) The Regional Administrator may review any project which he considers may potentially contaminate the aquifer through its recharge zone so as to create a significant hazard to public health.

§ 149.103 Public information.

After the area is designated under section 1424(e), Federal agencies, for projects, located in the recharge zone and streamflow source zones, are required to:

(a) Maintain a list of projects for which environmental impact statements will be prepared in accordance with the National Environmental Policy Act (NEPA);

(b) Revise the list at regular intervals and submit to EPA; and

(c) Make the list available to the public upon request.

§ 149.104 Submission of petitions.

Any person may submit a petition requesting the Regional Administrator to review a project to determine if such project may contaminate the aquifer through its recharge zone so as to create a significant hazard to public health. Any such petition shall identify:

(a) The name, address, and telephone number of the individual, organization, or other entity submitting the petition;

(b) A brief statement of the requesting person’s interest in the Regional Administrator’s determination;

(c) The name of the project and Federal agency involved;

In addition, the petitioner is requested to submit to EPA available information on:

(d) Applicable action already taken by State and local agencies including establishment of regulations to prevent contamination of the aquifer and why, in the petitioner’s judgment, the action was inadequate.

(e) Any actions taken under the National Environmental Policy Act and why, in the petitioner’s judgment, that action was inadequate in regard to evaluation of potential effect on the aquifer.

(f) The potential contaminants involved;

(g) The means by which the contaminant might enter the aquifer; and

(h) The potential impact of the proposed project.

§ 149.105 Decision to review.

(a) The Regional Administrator shall review under section 1424(e) all projects located in the recharge or streamflow source zone of the aquifer for which a draft or final EIS is submitted which may have an impact on ground water quality and which involve Federal financial assistance as defined in these regulations.

(b) Upon receipt of a public petition, the Regional Administrator shall decide whether the project which is the subject of the petition should be reviewed under section 1424(e).

(c) The Regional Administrator may decide to review a project upon his own motion.

(d) In determining whether to review a project upon receipt of a public petition or upon his own motion, the Regional Administrator shall consider whether the project is likely to directly or indirectly cause contamination of the aquifer through its recharge zone, taking into account any factors he deems relevant, including:

(1) The location of the project, and

(2) The nature of the project.

(e) In determining whether to review a project upon receipt of a public peti-
tion or upon his own motion, the Regional Administrator may consult with, or request information from, the Federal agency to which the project application has been made, the applicant seeking Federal assistance, appropriate State and local agencies, and other appropriate persons or entities.

(f) In determining whether to review a project which is the subject of a public petition, the Regional Administrator may request such additional information from the petitioner as he deems necessary.

§149.106 Notice of review.

(a) Notice to Federal agency. If the Regional Administrator decides upon receipt of a public petition or upon his own motion to review a project under section 1424(e), he shall give written notification of the decision to the Federal agency from which financial assistance is sought. The notification shall include a description and identification of the project.

(b) Notice to public. When the Regional Administrator undertakes to review a project pursuant to §149.13 above, he shall provide public notice of project review by such means as he deems appropriate. The notice shall set forth the availability for public review of all data and information available, and shall solicit comments, data and information with respect to the determination of impact under section 1424(e). The period for public comment shall be 30 days after public notice unless the Regional Administrator extends the period at his discretion or a public hearing is held under §149.16.

§149.107 Request for information.

In reviewing a project under section 1424(e), the Regional Administrator may request any additional information from the funding Federal agency which is pertinent to reaching a decision. If full evaluation of the groundwater impact of a project has not been submitted in accordance with the agency's NEPA procedures, the Regional Administrator may specifically request that the Federal agency submit a groundwater impact evaluation of whether the proposed project may contaminate the aquifer through its recharge zone so as to create a significant hazard to public health.

§149.108 Public hearing.

If there is significant public interest, the Regional Administrator may hold a public hearing with respect to any project or projects to be reviewed if he finds that such a hearing is necessary and would be helpful in clarifying the issues. Public hearings held under this section should be coordinated, if possible, with other Federal public hearings held pursuant to applicable laws and regulations. Any such hearing shall be conducted by the Regional Administrator or designee in an informal, orderly and expeditious manner. Where appropriate, limits may be placed upon the time allowed for oral statements, and statements may be required to be submitted in writing. The record will be held open for further public comment for seven (7) days following the close of the public hearing.

§149.109 Decision under section 1424(e).

(a) As soon as practicable after the submission of public comments under section 1424(e) and information requested by the Environmental Protection Agency from the originating Federal agency, on the basis of such information as is available to him, the Regional Administrator shall review the project taking all relevant factors into account including:

1. The extent of possible public health hazard presented by the project;
2. Planning, design, construction, operation, maintenance and monitoring measures included in the project which would prevent or mitigate the possible health hazard;
3. The extent and effectiveness of State or local control over possible contaminant releases to the aquifer;
4. The cumulative and secondary impacts of the proposed project; and
5. The expected environmental benefits of the proposed project.

(b) After reviewing the available information, the Regional Administrator shall:

1. Determine that the risk of contamination of the aquifer through the recharge zone so as to create a signifi-
§ 149.110 Resubmittal of redesigned projects.

If a project is redesigned in response to EPA's objections, the applicant for Federal financial assistance or the grantor agency may file a petition with the Regional Administrator for withdrawal of the determination that the project may contaminate the aquifer through the recharge zone so as to create a significant hazard to public health. Any such petition shall demonstrate how the project has been redesigned so as to justify the withdrawal of EPA's objections. If appropriate, the Regional Administrator may request public comments or hold an informal public hearing to consider the petition. After review of pertinent information, the Regional Administrator shall either deny the petition or recommend to the Administrator that the initial determination that a project may contaminate the aquifer be vacated. Upon receipt of a recommendation from the Regional Administrator that a determination be vacated, the Administrator shall either deny the petition or order that the initial determination be vacated. The final decision regarding a petition shall be published in the FEDERAL REGISTER with an accompanying statement of reasons.

§ 149.111 Funding to redesigned projects.

After publication of a decision that a proposed project may contaminate a sole or principal source aquifer in a designated area through its recharge zone so as to create a significant hazard to public health, a commitment for Federal financial assistance may be entered into, if authorized under another provision of law, to plan or redesign such project to assure that it will not so contaminate the aquifer.
Criteria for Highway SDWA Section 1412(e) Evaluations

I. SETTING

Data on commercial, industrial, residential and other land uses - located and quantified.

II. TYPE AND USE OF HIGHWAY

- Interstate;
- 1 Degree Divided;
- 1 Degree Undivided Multi-lane;
- 1 Degree Two-lane;
- 2 Degree; and
- Accident Analysis.

III. CONSTRUCTION

A. Hydrogeological Impact Assessment of:
   1. Cuts through impervious strata;
   2. Retarding infiltration by placement of compacted fill and pavement over permeable recharge areas;
   3. Intersection of the water table by highway alignment profile; and
   4. Creation of openings in consolidated material that might allow surface water or contaminants to enter ground water more directly.

An effective assessment of potential ground water threats requires that:

- All areas that would be disturbed during construction are fully described with respect to maximum ground water elevations;

- Provisions will be made (construction specifications, for example) restricting storage, stockpiling, and use of various construction chemicals, pesticides, or fertilizers in areas where the water table is at or near the land surface, and;

- Provisions will be made for control of construction site runoff and placement of fill material to minimize direct entry of contaminants to the exposed saturated zone.

IV. DRAINAGE

Effective assessment of potential threats requires that:

- Identification and delineation of soils, rock outcrops, fracture zones, solution channels, and other geological features that exhibit high permeabilities and are accessible to infiltrating runoff;
- Characteristics of natural drainage system;
- Extent to which drainage would be alter by highway;
- Characteristics of receiving water bodies (perennial/ephemeral streams, ponds, wetlands);
- Characteristics of runoff conveyance structures or provisions;
- Potential for accumulation of runoff/runoff-borne contaminants;
- Plans to minimize infiltration of poor quality highway runoff through identified highly permeable recharge areas;
- Adjustment of proposed alignment or selection of alternative corridor to reduce interactions with critical areas of high permeability;
- The extent to which runoff from the highway would collect in such areas and recharge the ground water, and;
- The means by which spills or other introductions of hazardous materials would be detected, reported, and dealt with.

V. MAINTENANCE PRACTICES

- Description of the maintenance program (particularly chemical types and frequency of application); and
- Salt burden analyses - salt laden runoff;
  - cumulative impacts, and
  - secondary impacts.

A. Salt Storage Sites
- Restrictions on pesticide, fertilizer, deicing salt, and other chemical usage in areas where significant recharge is anticipated;
- Provisions for regular monitoring of ground water quality in the project area, and;
- Prevention of leaching and runoff from all deicing and other chemical storage areas (by construction of dome-type enclosures or sheds, for example).

VI. CONSTRUCTION IMPACTS

A. Geology - Susceptibility of aquifers and recharge areas to pollution:
- Nature of potential pollutants;
- Physical characteristics of aquifers;
- Location of recharge areas; and
- Physical characteristics of materials overlying aquifers.
  - Silt, clay, and organic matter are particularly effective in filtering out heavy metals, deicing additives, and sodium and calcium ions in deicing agents.
B. Long Term
- Construction of foundation may disrupt the rate of direction ground water flow, much like a dam across a stream may divert flow to surface waters;
- Removal of protective impervious layers, exposing underlying aquifers to contamination;
- Reduction in recharge capacity;
- Extraction of geologic materials for construction; and
- Compaction of subsurface materials, reducing their ability to hold and transmit water.

C. Short Term
- Control of site runoff and placement of fill material to minimize direct entry of contaminants to the exposed saturated zone;
- Control of the storage, use, and stockpiling of various chemicals, pesticides, or fertilizers in areas where the water table is at or near the surface;
- Special efforts to protect ground water in areas that are close to drinking water supplies (200m); and
- Immediate action may avert pollution of ground water therefore a well thought-out cleanup program is needed.

D. Maintenance Chemicals
- Fertilizers, growth retardants, sterilants, herbicides, insecticides.
  - Proper handling and application to minimize the possibility of hazardous concentrations reaching and adversely affecting the ground water.

E. Highway Service Areas
- Monitoring and leak detection systems.

F. Deicing Chemicals: SALT

1. Storage
- Easy access to minimize losses in handling;
- Preferably at sites free of ground water;
- Protection from elements on top and bottom; and
- Collection and possible treatment of drainage.

2. Application
- Large trucks used, fewer sites needed;
- Trucks in good control of application rates;
- Consideration of traffic volumes, snow conditions, level of service needed, temperatures;
- Records of salt delivered and used;
- Design of drainage system, especially terminal point of system; and
- Possible control of collection, treatment of runoff.
3. Disposal
- No disposal into waterways or onto watersheds;
- Evaluate possibility of man-made melting vats where not natural environmentally sound sites; and
- Evaluate possibility of recycling of salt by evaporation or other means.

4. Education
- Environmental impact awareness;
- Demonstration of optimum procedures and techniques necessary in winter time highway deicing; and
- Presentation of alternatives: i.e., plow clean during and after a storm, salting only as needed; or salt only once (not two or three times), then plow to leave a slush layer.

5. Program to Monitor Ground Waters
- LOOK AT CUMULATIVE EFFECTS!