

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

In re: Camp Dresser & McKee, Inc.
Petition for Variance

OGC File No. 00-0762

FINAL ORDER GRANTING PETITION FOR
VARIANCE FROM RULE 62-522.300(2)(a), F.A.C.

On March 23, 2000, Camp Dresser & McKee, Inc. (CDM), filed a petition for variance from requirements in rule 62-522.300(2)(a) of the Florida Administrative Code, under section 120.542 of the Florida Statutes and rule 28-104.002 of the Florida Administrative Code. The petition was for a variance from rule 62-522.300(2)(a), which prohibits a zone of discharge for discharges through wells, in order to use enhanced anaerobic bioremediation as the correction action at sites where ground water is contaminated with chlorinated aliphatic hydrocarbons. This process involves the use of wells or borings which is considered installation of one or more temporary Class V underground injection control wells at the site of contamination. A notice of receipt of the petition was published in the Florida Administrative Weekly on April 14, 2000.

1. Petitioner is located at 2301 Maitland Center Parkway, Suite 300, Maitland, Florida 32751.

2. CDM wants to use enhanced anaerobic bioremediation as a closed loop re-injection in-situ aquifer remediation system into which aqueous sodium lactate solutions are introduced.

3. Under rule 62-520.420 of the Florida Administrative Code, the standards for Class G-II ground waters include the primary and secondary drinking water standards of rules 62-550.310 and 62-550.320 of the Florida Administrative Code, and the minimum criteria of rule 62-520.400.

4. The aqueous sodium lactate solutions will be in concentrations up to 500 milligrams per liter (mg/L), and ammonia and ortho-phosphate nutrients in concentrations up to 0.5 mg/L. The sodium lactate serves as the electron donor in a reductive dechlorination chemical reaction that occurs as the indigenous microorganisms in the aquifer at a contaminated site degrade chlorinated hydrocarbon solvents to the ultimate degradation products of ethane and ethene. The closed-loop re-injection system operates until the quality of the re-injected water and the quality of the water in the aquifer meet appropriate ground water cleanup target levels (GCTL). Initially, the re-injected fluid will contain contaminants of concern (see paragraph 5) and their intermediate degradation products in concentrations that exceed their respective GCTLs or minimum ground water criteria. As the system continues to operate, the degree of exceedance declines until the quality of both re-injected water and the water in the aquifer meet ground water target levels.

5. Components of the re-injected water may contain chemical species from each of the categories below.

a. Contaminants of concern: chlorinated solvents whose total concentration is approximately 8 mg/L, composed of

perchloroethylene (PCE), trichloroethylene (TCE), and trichloroethane (TCA).

b. Chemical additives: sodium lactate, ammonia, and orthophosphate.

c. Intermediate degradation products: dichloroethylene (DCE) isomers, dichloroethane (DCA) isomers, vinyl chloride (VC), and chloroethane (CA) which is also known as ethyl chloride.

d. Products and byproducts: chloride, ethene, ethane, carbon dioxide, methane, microbial biomass, and ethanol.

6. The concentrations of certain contaminants may temporarily exceed the Department's primary and secondary drinking water contaminants, or the minimum criteria for ground water found in rules 62-550.310, 62-550.320, and 62-520.400 of the Florida Administrative Code. The exceedances of any of these standards would be within a 75-foot radius around each injection well, and for a period of time not to exceed 365 days from the date of last injection through the particular well. The primary drinking water standards and their numerical standards that might be exceeded are: sodium (160 mg/L), perchloroethylene (0.003 mg/L), 1,1,1-trichloroethane (0.2 mg/L), 1,1,2-trichloroethane (0.005 mg/L), trichloroethylene (0.003 mg/L), 1,1-dichloroethylene (0.007 mg/L), cis 1,2-dichloroethylene (0.07 mg/L), trans 1,2-dichloroethylene (0.1 mg/L) 1,2-dichloroethane (0.002 mg/L), and vinyl chloride (0.001 mg/L). The secondary drinking water parameter and its numerical standard that may be exceeded is: chloride (250 mg/L). The minimum criteria of concern with a health-based level that may be exceeded are:

ammonia (2.8 mg/L), 1,2-mixture dichloroethylene (0.063 mg/L), 1,1-dichloroethane (0.07 mg/L), chloroethane or ethyl chloride (0.012 mg/L).

7. The presence of these substances above the standards or health-based levels has no anticipated adverse impacts to human health because such exceedances will occur only in ground water at a site already contaminated by chlorinated hydrocarbon solvents, and the ground water is not presently used for domestic purposes. No other constituents of the injected products or resulting reductive dechlorination will exceed any other minimum criteria or primary or secondary drinking water standard. These substances will return to meeting the respective standards, within, at most, one year from injection.

8. The injection of these products through temporary wells or borings is considered a type of underground injection control well, Class V, Group 4, "injection wells associated with an aquifer remediation project," as described in rule 62-528.300(1)(e)4 of the Florida Administrative Code. Under rule 62-528.630(2)(c), "Class V wells associated with aquifer remediation projects shall be authorized under the provisions of a remedial action plan . . . provided the construction, operation, and monitoring of this Chapter are met."

9. The rule (62-522.300(2)(a)) from which this petition seeks a variance prohibits the Department from granting a zone of discharge for a discharge through an injection well to Class G-II ground water. Strict adherence to this rule would preclude the Department from granting approval for the use of the in-situ

enhanced anaerobic bioremediation using aqueous sodium lactate for remediation of contaminated ground water.

10. The applicable rules state in pertinent part:

62-522.300(1) . . . [N]o installation shall directly or indirectly discharge into any ground water any contaminant that causes a violation in the ground water quality standards and criteria for the receiving ground water as established in Chapter 62-520, F.A.C., except within a zone of discharge established by permit or rule pursuant to this chapter.

62-522.300(2) No zone of discharge shall be allowed under any of the following circumstances:

(a) Discharges through wells or sinkholes that allow direct contact with Class G-I and Class G-II ground water

11. CDM has stated in its petition that to apply the zone of discharge prohibition to its use of this remediation process would create a substantial hardship because the use of the process is to remediate contaminated ground water as quickly and economically as possible so that the ground water will be returned to its designated use. The use of this technology has the potential to greatly improve water quality in the affected area with no long term adverse impacts to surrounding or potential drinking water resources. This small and temporary exceedance is not the usual occurrence, nor are most dischargers involved in the remediation of contaminated ground water. By allowing the use of the in-situ enhanced anaerobic bioremediation using sodium lactate, the cleanup of the contaminated ground water will be accelerated and returned to a usable condition. In addition, the use of the in-situ sodium lactate has been tentatively approved by the Department's Division of Waste

Management as being a sound environmental solution to the contamination, so long as CDM is able to obtain a variance.

12. Zones of discharge for the use of sodium lactate during in-situ enhanced anaerobic bioremediation are necessary because there may be temporary exceedances in the ground water immediately surrounding the injection points. Paragraph 6 lists the numerical standards for the primary and secondary drinking water contaminants involved, and the health-based levels for minimum criteria contaminants of concern that may be involved. Because this ground water is already contaminated and does not meet all applicable standards, allowing a zone of discharge for these parameters and allowing an area within which the minimum criteria may be exceeded as part of an approved remediation strategy for chlorinated hydrocarbon solvents contaminants meets the purpose of the underlying statute. That purpose is to improve the quality of the waters of the state for beneficial uses, while protecting the public health, safety and welfare. Such contaminated ground water is not presently used for drinking purposes, thus posing no threat to human health.

13. The Department received no comments about the petition for variance.

14. For the foregoing reasons, CDM has demonstrated that it is entitled to a variance from the prohibition of zones of discharge in rule 62-522.300(2)(a) for its remedial process at sites contaminated with chlorinated hydrocarbons, with the conditions below.

a. Use of in-situ sodium lactate enhanced anaerobic bioremediation using must be through a Department-approved remedial action plan or other Department-enforceable document, and such approval shall not be solely by a delegated local program.

b. The discharge to the ground water must be through a Class V, Group 4 underground injection control well which meets all of the applicable construction, operating, and monitoring requirements of chapter 62-528 of the Florida Administrative Code.

c. The extent of the zone of discharge (and the area within which certain minimum criteria will not have to be met) for the parameters listed in paragraph 6 shall be a 75-foot radius from the point of injection, and the duration of the zone of discharge shall be one year. This will allow ample time for the temporarily exceeded parameters to return to the primary drinking water standards and secondary drinking water standard in chapter 62-550, or the minimum criteria of chapter 62-520, or the naturally occurring background level (if applicable) for any of those substances at the site, whichever is less stringent.

d. The injection of the products shall be at such a rate and volume that no undesirable migration occurs of either the products, their by-products, or the contaminants already present in the aquifer.

e. The Department-approved remedial action plan or other Department-enforceable document shall address appropriate ground

water monitoring requirements associated with the use of the in-situ enhanced anaerobic bioremediation using sodium lactate based on site-specific hydrogeology and conditions. These shall include the sampling of ground water at monitoring wells located outside the contamination plume, before use of the in-situ process, to determine the naturally occurring background levels of the substances listed under paragraph 6, which are the parameters pertinent to this variance. They should also include monitoring of these parameters, and the parameters in paragraph 5a and c, and ammonia in ground water downgradient from the injection points for at least one year after active remediation.

This order will become final unless a timely petition for an administrative hearing is filed under sections 120.569 and 120.57 of the Florida Statutes before the deadline for a filing a petition. The procedures for petitioning for a hearing are set forth below.

A person whose substantial interests are affected by the Department's action may file for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000.

Petitions filed by the Camp Dresser & McKee, Inc., or any of the parties listed below must be filed within 21 days of receipt of this written notice. Petitions filed by any other persons

other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within 21 days of publication of the public notice receipt of the written notice, whichever occurs first. Under section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within 21 days of receipt of such notice, regardless of the date of publication. The petitioner shall mail a copy of the petition to Camp Dresser & McKee, Inc., 2301 Maitland Center Parkway, Suite 300, Maitland, Florida 32751, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 of the Florida Statutes, or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the discretion of the presiding officer upon the filing of a motion in compliance with rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information:

(a) The name, address, and telephone number of each petitioner; the Department case identification number and the county in which the subject matter or activity is located;

(b) A statement of how and when each petitioner received notice of the Department action;

(c) A statement of how each petitioner's substantial interests are affected by the Department action;

(d) A statement of the material facts disputed by the petitioner, if any;

(e) A statement of facts that the petitioner contends warrant reversal or modification of the Department action;

(f) A statement of which rules or statutes the petitioner contends require reversal or modification of the Department action; and

(g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take.

A petition that does not dispute the material facts on which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by rule 28-106.301.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation under section 120.573 of the Florida Statutes is not available for this proceeding.

This action is final and effective on the date filed with the Clerk of the Department unless a petition is filed in accordance with the above.

Any party to this order has the right to seek judicial review of it under section 120.68 of the Florida Statutes, by filing a notice of appeal under rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department in the Office of General Counsel, Mail Station 35, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000, and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate district court of appeal. The notice must be filed within thirty days after this order is filed with the clerk of the Department.

DONE AND ORDERED this 25 day of September 2000 in Tallahassee, Florida.

Mimi A. Drew
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FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to s. 120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Lisa Suvarengin
Clerk

9/26/00
Date

Copies furnished to:
George Heuler, UIC Section
Jeff Lockwood, Bur. Waste Cleanup
Brent Hartsfield, Bur. Waste Cleanup
Rick Ruscito, Petroleum Cleanup
Cynthia Christen, OGC