

BEFORE THE STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

In re: GEO-CLEANSE INTERNATIONAL, INC.  
Petition for Variance

OGC File No.98-1848

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FINAL ORDER GRANTING PETITION FOR  
VARIANCE FROM RULE 62-522.300(2)(a)

On June 15, 1998, Geo-Cleanse International, Inc. (GCI), 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 its in-situ remedial technology. This process involves the installation of one or more temporary Class V underground injection control wells at the site of soil and ground water contamination. A notice of receipt of the petition was published in the Florida Administrative Weekly on July 2, 1998.

1. Petitioner is located at 4 Mark Road, Suite C, Kenilworth, New Jersey 07033.

2. Based on discussion with the Department's Bureau of Petroleum Storage Systems, GCI submitted a revised petition for

variance and asked that this petition supersede the previously filed petition. This petition was deemed complete.

3. GCI has developed a patented in-situ remedial technology, Geo-Cleanse® Process, to destroy organic contamination by oxidation reaction. The wells are used to inject a mixture of catalysts and an oxidizer into the ground water in and around specific areas of known contamination. GCI's remedial method uses a patented delivery system to effectively distribute the catalyst and oxidizer for treatment of the contaminants in the area of concern. For hydrocarbon contaminants, the by-products of the oxidation reaction are water and carbon dioxide. For chlorinated hydrocarbon contaminants, the by-products will also include inorganic salts. Actual full-scale site cleanups using the Geo-Cleanse® Process have demonstrated a high degree of success in reducing the levels of organic contamination in ground water and soil in a short period of time.

4. 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.

5. The Geo-Cleanse® mixture contains an iron sulfate catalyst, hydrogen peroxide oxidizer, small amounts of sulfuric and phosphoric acid for pH adjustment, and calcium phosphate stabilizer. Upon injection into the ground water, it is expected

that the concentrations of iron, a secondary drinking water standard, will temporarily exceed the ground water standard of 0.3 mg/L for iron within an area extending out in a radius of ten feet from the immediate point of injection. The presence of iron above the standard has the effect of discoloring the water and clothing washed in the water. No adverse impacts to human health are anticipated from the iron because such an exceedance will occur only in ground water at a site already contaminated by organics, and the ground water is not presently used for domestic purposes. Upon injection of the mixture into the subsurface it is expected that the pH of the ground water will temporarily fall below the secondary drinking water standard of 6.5 in an area extending out in a radius of ten feet from the point of injection. No adverse impacts to human health are expected to occur from the temporary lowering of the pH because of the immense buffering capacity of the aquifer, and as with iron, the water is not presently used for domestic purposes. Sulfate and total dissolved solids which are parameters with secondary drinking water standards of 250 and 500 mg/L respectively, will also be temporarily exceeded only in an area extending out in a radius of ten feet from the point of injection. No adverse impacts to human health are expected to occur from the exceedance of either sulfate or total dissolved solids because the water is already contaminated and is not presently used for domestic purposes. No other constituents of the injected mixture will

exceed any primary or secondary drinking water standard. Each of these parameters will return to meeting its secondary drinking water standard, or at least match its naturally occurring background value, whichever is less stringent, within 365 days from injection.

6. The type of underground injection control wells will be 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."

7. 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 Geo-Cleanse® Process as a remedial technology.

8. 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 . . . .

9. GCI 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 and would violate the principles of fairness because the use of the process is to remediate contaminated ground water. Remediation would improve the water quality, and to prohibit any exceedance of the specified secondary drinking water standards, all non-health-based standards, in such a small area of already contaminated ground water and for short duration would violate the principles of fairness. 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 Geo-Cleanse® Process, the clean-up of the contaminated ground water will be accelerated and returned to a usable condition. In addition, the use of the Geo-Cleanse® Process has been tentatively approved by the Department's Bureau of Petroleum Storage Systems as being a sound environmental solution to the contamination, so long as GCI is able to obtain a variance. Lastly, other similar in-situ processes have been granted variances, and not to allow this process to be used would violate the principles of fairness.

10. Zones of discharge for the use of the Geo-Cleanse® Process are necessary because of the temporary exceedance of the iron, pH, sulfate, and total dissolved solids standards in the ground water immediately surrounding the injection. Because this ground water is already contaminated and does not meet all applicable standards, allowing a zone of discharge as part of an approved remediation strategy for organic contaminants meets the purpose of the underlying statute, which is to improve the quality of the waters of the state for beneficial uses. Such contaminated ground water is not presently used for drinking purposes, thus posing no threat to human health.

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

12. For the foregoing reasons, GCI 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 technology, with the conditions below.

a. Use of the Geo-Cleanse® Process must be through a Department-approved remedial action plan, or other enforceable document, for an aquifer remediation project 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 for iron, pH, sulfate, and total dissolved solids shall be a ten-foot radius from the point of injection and the duration of the zone of discharge shall be 365 days. This will allow ample time for the temporarily exceeded parameters to return to their secondary drinking water standards set forth in chapter 62-550 of the Florida Administrative Code, or their naturally occurring background levels at the site, whichever is less stringent.

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

e. The Department-approved remedial action plan shall address appropriate ground water monitoring requirements associated with the use of the Geo-Cleanse® Process for remediation 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 Geo-Cleanse® Process, to determine the naturally occurring background levels of iron, pH, sulfate, and total dissolved solids which are the parameters pertinent to this variance. They should also include monitoring of these parameters in ground water downgradient from the injection points for at least one year after active remediation.

This final order will become final unless a petition for an administrative proceeding is filed pursuant to the provisions of sections 120.569 and 120.57 of the Florida Statutes. Any person whose substantial interests are affected by the Department's action may file such a petition. The petition must contain the information set forth below and must be filed (received) in the Department's Office of General Counsel, 3900 Commonwealth Boulevard, MS 35, Tallahassee, Florida 32399-3000. Petitions filed by GCI or any of the parties listed below must be filed within 21 days of receipt of this order. Petitions filed by any other person must be filed within 21 days of publication of the public notice or within 21 days of receipt of this order, whichever occurs first. A petitioner must mail a copy of the petition to Geo-Cleanse International, Inc., 4 Mark Road, Suite C, Kenilworth, New Jersey 07033 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 will only be 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 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.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department final action may be different from the position taken by it in this order. Persons whose substantial interests will be affected by any such final decision of the Department on the petitions 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.

A 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 5<sup>th</sup> day of August 1998 in  
Tallahassee, Florida.

Mimi Drew

Mimi A. Drew  
Director,  
Division of Water Facilities

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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.

Dakota O'Neal  
Clerk

8/6/98  
Date

Copies furnished to:

Richard Ruscito, Petroleum Cleanup Section 4  
Will Evans, UIC  
Cynthia Christen, OGC

CERTIFICATE OF SERVICE

I certify that a copy of the foregoing Final Order has been furnished by U.S. Mail to Robert Glaser, Geo-Cleanse International, Inc., 4 Mark Road, Suite C, Kenilworth, New Jersey 07033 on this \_\_\_\_\_ day of August 1998.

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Cynthia K. Christen  
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