

BEFORE THE STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

In re: Natural Resource Recovery Group, Inc.  
Petition for Variance

OGC File No. 00-0502

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

On February 16, 2000, Natural Resource Recovery Group, Inc., 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 product. 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 March 10, 2000.

1. Petitioner is located at 7255 NW 68<sup>th</sup> Street, Miami, Florida 33161.
2. Natural Resource Recovery Group, Inc., wants to use in-situ chemical oxidation using potassium permanganate for the

remediation of sites contaminated with compounds susceptible to oxidation such as petroleum compounds and chlorinated solvents.

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.

4. A solution of Biotech grade potassium permanganate with a maximum concentration of 2.5% is injected through wells or borings into soil and ground water. When the potassium permanganate contacts the contaminant molecules, the molecules are broken such that the contaminant is oxidized. Once the chlorinated compounds and petroleum products are fully oxidized, the resulting end products are carbonate species, chloride, carbon dioxide, potassium salts, and manganese dioxide. Laboratory and field tests of in-situ chemical oxidation with potassium permanganate have demonstrated remarkable success in reducing contaminant concentrations. When potassium permanganate is added to the ground water color, pH, total dissolved solids, chloride, iron, and manganese may temporarily exceed the secondary drinking water standards of 15 color units, 6.5-8.5, 500 mg/L, 250 mg/L, 0.3 mg/L, and 0.05 mg/L respectively, within an area extending out in a radius of 30 feet from the immediate point of injection. In addition, cadmium, chromium, nickel, and lead may temporarily exceed the primary drinking water standards of 0.005 mg/L, 0.1 mg/L, 0.1 mg/L, and 0.015 mg/L respectively,

within an area extending out in a radius of 30 feet from the immediate point of injection. The presence of these contaminants above the standards (or for pH below the required standard) has no anticipated adverse impacts to human health because such exceedances will occur only in ground water at a site already contaminated by organics, and the ground water is not presently used for domestic purposes. No other constituents of the injected product or resulting oxidation are expected to exceed any other primary or secondary drinking water standard. However, because of possible impurities in the ore from which the potassium permanganate is extracted, additional contaminants will be monitored for, as contained in paragraph 11 e. The color, pH, total dissolved solids, chloride, iron, manganese, cadmium, chromium, nickel, and lead will return to meeting the respective drinking water standard, or meet the naturally occurring background value, whichever is less stringent, within, at most, one year from injection.

5. The injection of this product 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."

6. 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 chemical oxidation with potassium permanganate for remediation of contaminated ground water and soils.

7. 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 . . . .

8. Natural Resource Recovery Group, Inc., 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 or would violate the principles of fairness because the use of the process is to remediate contaminated ground water. The petition also states that other methods of remediation not using in-situ products or processes are more costly and take

longer. Remediation would improve the water quality, and to prohibit any exceedance of the specified drinking water standards in such a small area of already contaminated ground water and for short duration would cause a substantial hardship. 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 potassium permanganate, the clean up of the contaminated ground water and soils will be accelerated and returned to a usable condition. In addition, the use of the in-situ potassium permanganate has been tentatively approved by the Department's Division of Waste Management as being a sound environmental solution to the contamination, so long as Natural Resource Recovery Group, Inc., 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.

9. Zones of discharge for the use of the in-situ potassium permanganate are necessary because of the temporary exceedance of the color, pH, chloride, total dissolved solids, iron, manganese, cadmium, chromium, nickel, and lead 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.

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

11. For the foregoing reasons, Natural Resource Recovery Group, Inc., 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 product, with the conditions below.

a. Use of the in-situ potassium permanganate must be through a Department-approved remedial action plan, or other Department-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 color, pH, total dissolved solids, chloride, iron, manganese, cadmium, chromium, nickel, and lead shall be a 30-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 their 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 the product shall be at such a rate and volume that no undesirable migration occurs of either the product, its by-products, 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 in-situ potassium permanganate 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 in-situ potassium permanganate, to determine the naturally occurring background levels of color, pH, total dissolved solids, chloride, iron, manganese, cadmium, chromium, nickel, and lead which are the parameters pertinent to this variance. They shall also include monitoring of these parameters in ground water downgradient from the injection points for at least one year after active remediation. In addition, because of the possible impurities in the ore, aluminum, antimony, arsenic, mercury, molybdenum, thallium, and vanadium shall be monitored for in the ground water both before the injection of potassium permanganate

begins, and shall continue downgradient from the injection points for at least one year after 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 Natural Resource Recovery Group, 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 Natural Resource Recovery



Group, Inc., 7255 NW 68<sup>th</sup> Street, Miami, Florida 33161 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 6 day of April 2000 in Tallahassee, Florida.

Mimi A. Drew

Mimi A. Drew  
Director  
Division of Water Resource  
Management

2600 Blair Stone Road  
Mail Station 3500  
Tallahassee, Florida 32399-2400  
Telephone: (850) 487-1855

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.

Heather Chapman 4/10/00  
Clerk Date

Copies furnished to:

George Heuler, UIC Section  
Bill Neimes, Bur. Waste Cleanup  
Brent Hartsfield, Bur. Waste Cleanup  
Rick Ruscito, Petroleum Cleanup  
Cynthia Christen, OGC

CERTIFICATE OF SERVICE

I certify that a copy of the foregoing Final Order has been furnished to Bassim Halwani by facsimile at 305/887-5269, and by U.S. Mail at Natural Resource Recovery Group, Inc., 7255 NW 68<sup>th</sup> Street, Miami, Florida 33161, on this \_\_\_\_\_ day of \_\_\_\_\_ 2000.

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Cynthia K. Christen  
Sr. Assistant General Counsel

Department of  
Environmental Protection  
3900 Commonwealth Blvd.  
MS 35  
Tallahassee, FL 32399-3000  
Telephone 850/921-9610