

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2002-0167

WASTE DISCHARGE REQUIREMENTS
FOR
NUEVO ENERGY COMPANY,
CAGLE-USL LEASE, COALINGA NOSE UNIT
EAST COALINGA EXTENSION OIL FIELD
FRESNO COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Regional Board) finds that:

1. Nuevo Energy Company, a Delaware Corporation, (hereafter Discharger) owns and operates crude oil production wells and associated facilities at the Cagle-USL Lease in the Coalinga Nose Unit of East Coalinga Extension Oil Field. East Coalinga Extension Oil Field is on the west side of the San Joaquin Valley, approximately 7 miles northeast of Coalinga, in Fresno County.
2. The United States Department of the Interior, Bureau of Land Management (BLM) owns mineral rights at the Cagle-USL Lease (Federal Lease No. CAS019266B).
3. The Discharger has operated nine unlined surface impoundments, generally known in the industry as sumps, at the Cagle-USL Lease since the 1950's. The sumps are used for the disposal of non-hazardous production wastewater through percolation and solar evaporation.
4. The discharge of wastewater to the sumps is currently regulated by Resolution No. 56-040. The Resolution is not consistent with current State regulations and Regional Board policies and guidelines.
5. This Order implements the *Water Quality Control Plan for the Tulare Lake Basin, Second Edition* (hereafter, Basin Plan) which designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin.

LOCATION AND DESCRIPTION

6. The Cagle-USL Lease is 528.77 acres in size, and is in the N ½ and SW ¼ of Section 6, T20S, R16E, MDB&M (Assessor Parcel No. 073-020-01), as shown on Attachments A and B which are attached to and made part of this Order.
7. The nine sumps are in three groups designated as Cagle, Zwang, and 6F (Attachment B). The Cagle group consists of four sumps covering an area of approximately 11.7 acres in the NW ¼ of Section 6, T20S, R16E, MDB&M. The Zwang group consists of three sumps covering an area of approximately 15.1 acres in the NE ¼ of Section 6, T20S, R16E, MDB&M. The 6F group consists of the west 6F and east 6F sumps, which have a

- combined area of approximately 2.2 acres in the SW $\frac{1}{4}$ of Section 6, T20S, R16E, MDB&M.
8. During March 2001, the discharge of wastewater to the Zwang and 6F sumps was terminated. Wastewater was diverted to the Cagle sumps, which were previously in a clean and dry condition.
 9. The sumps are unlined and do not meet the prescriptive construction criteria for Class II surface impoundments as specified in Title 27, California Code of Regulations (CCR), Section 20005, et seq.
 10. Land within the area is predominantly native grass and shrub vegetation. Land use at the Cagle-USL Lease is limited to oil and gas production and cattle grazing. There are agricultural operators approximately one mile to the northeast in Section 32, T19S, R16E, MDB&M.
 11. The East Coalinga Extension Oil Field lies on the northeast flank of a topographic feature known as the Anticline Ridge. The Anticline Ridge is the surface expression of a southeast plunging anticline known as the Coalinga Anticline.
 12. The climate is semi-arid, with hot, dry summers and cool winters. Based on information obtained from the Department of Water Resources, the area has an average annual precipitation of approximately 7.8 inches, an annual Class A pan evaporation rate of approximately 89 inches, and a 100-year, 24 hour precipitation event of approximately 2.6 inches.
 13. At the Cagle-USL Lease, lithologic units include the Tulare Formation and the upper San Joaquin Formation. The Tulare consists of sand and gravel of fluvial origin and sand, clay, and lime of lacustrine origin. The upper San Joaquin consists of silty sand. These units gently dip to the east-northeast towards the San Joaquin Valley. Overlying the lithologic units is a moderately permeable fine sandy soil classified as part of the Kettleman loam series.
 14. Oil and wastewater is produced from the Gatchell sand in the middle Miocene Temblor Formation and from sands in the lower Miocene Vaqueros Formation. Depth of production ranges from approximately 6,400 to 10,000 feet.
 15. No known Holocene faults traverse or are projected through the area. The nearest known Holocene fault is the Nunez Fault located approximately 10 miles to the west. Major movement occurred on this fault in 1983. The San Andres Fault zone is located approximately 21 miles southwest of the site.

GROUNDWATER INFORMATION

16. Data on the occurrence and movement of groundwater in the area is limited. The estimated depth to groundwater ranges from about 300 feet to 900 feet. Depth to groundwater increases from approximately 300 to 400 feet on the west side of the lease to 900 feet on the east side. The groundwater flow direction is generally eastward; however, the gradient is unknown.
17. The nearest known groundwater supply well, identified as 20S/16E-6R1, is approximately 2,200 feet south of the Zwang sumps. The well was previously used by Nuevo Energy for industrial purposes. A second well, identified as 20S/16E-7B1, is approximately 2,600 feet east-southeast of the east 6F sump. This well continues to be used by Nuevo Energy for industrial purposes. The nearest agricultural well, 19S/16E-33N1, is approximately 1.2 miles east-northeast of the Zwang sumps.
18. The beneficial uses of groundwater beneath the area, as designated by the Basin Plan, include municipal supply. The groundwater is also used for industrial and agricultural supply.
19. To protect the beneficial uses of groundwater and prevent its degradation, the Basin Plan contains maximum salinity limits for the disposal of wastewater in unlined sumps overlying groundwater with existing and future probable beneficial uses. The maximum limits are:

<u>Parameter</u>	<u>Maximum Concentration</u>
Electrical Conductivity @ 25°C	1,000 µmhos/cm
Chloride	200 mg/L
Boron	1 mg/L

SURFACE WATER INFORMATION

20. An unnamed intermittent stream channel traverses the Cagle-USL Lease. Natural flow in the channel occurs during infrequent storm events.
21. Federal Emergency Management Agency Flood Insurance Rate Map, Community Panel Number 3235, dated 19 July 2001, shows the Cagle sumps and east 6F sump are not within the 500-year floodplain. The Zwang sumps and the west 6F sump are in the intermittent stream channel.

22. The site lies within the South Valley Floor Hydrologic Unit (No. 551.10) as depicted on interagency hydrogeologic maps, prepared by the Department of Water Resources in August 1986. The unnamed stream is defined as a Valley Floor Water in the Basin Plan. The beneficial uses of Valley Floor Waters include agricultural supply; industrial service and process supply; water contact and non-contact water recreation; warm freshwater habitat; wildlife habitat; rare and endangered species habitat; and groundwater recharge.

WASTEWATER CHARACTERISTICS AND CLASSIFICATION

23. Approximately 2.3 million barrels (96.6 million gallons or 297 acre feet) of non-hazardous wastewater was discharged to the Cagle, Zwang, and 6F sumps during 2001. Recent and historical analytical results indicate the wastewater has the following characteristics:

<u>Parameter</u>	<u>Concentration</u>
Electrical Conductivity @ 25°C	4,130 µmhos/cm
Chloride	837 mg/L
Boron	10.7 mg/L

24. Non-hazardous waste that contains pollutants that, under ambient environmental conditions at a waste management unit, could be released in concentrations exceeding applicable water quality objectives or that could reasonably be expected to affect beneficial uses of the waters of the state is defined in California Water Code, §13173 (b) as “Designated Waste.” The wastewater exceeds applicable water quality objectives and has the potential to affect beneficial uses of waters of the state and is, therefore, classified as designated waste.
25. There are no continuous restrictive clay layers underlying the area. Wastewater disposed of in the unlined sumps has the potential to migrate and degrade groundwater. There are no known barriers to restrict the lateral movement of groundwater.
26. Sumps used at the Cagle-USL Lease for disposal of wastewater classified as designated waste must be constructed in accordance with prescriptive criteria for Class II surface impoundments as specified in Title 27, Section 20005, et seq. Title 27 also requires groundwater and vadose zone monitoring, and assurance of financial responsibility for closure and for initiating corrective action for all known or reasonably foreseeable releases from the sumps.

DISCHARGE CONSIDERATIONS

27. Since sumps at the Cagle-USL Lease are currently unlined and not in compliance with Title 27, this Order contains a time schedule to permit the Discharger to review alternatives and provide a plan to either cease discharging wastewater that exceeds the maximum salinity limits prescribed in the Basin Plan, treat the wastewater, or bring the wastewater discharge into compliance with the prescriptive requirements described in Finding 19.

28. Alternatives to the discharge of wastewater to unlined sumps include: (a) discharge to sumps that are constructed in accordance with prescriptive criteria for Class II surface impoundments as specified in Title 27, Section 20005, et seq.; or (b) disposal of wastewater at a permitted waste disposal facility; or, (c) subsurface injection into an approved Class II injection well pursuant to Title 14, CCR, §1724, et seq. The method of achieving compliance will be at the Discharger's discretion.
29. This Order contains a time schedule that requires the Discharger to cease discharging production wastewater that exceeds the maximum salinity limits prescribed in the Basin Plan to unlined sumps and is therefore consistent with the antidegradation provisions of State Water Resources Control Board Resolution No. 68-16. Provided the Discharger complies with this Order, the short-term discharge should not cause adverse impacts on groundwater
30. The Discharger is not required to obtain coverage under a National Pollutant Discharge Elimination System (NPDES) general industrial stormwater permit, provided the facility has not experienced a reportable spill since 19 November 1987. It is the responsibility of the Discharger to comply with United States Environmental Protection Agency federal stormwater regulations (40 CFR Parts 122, 123, and 124) should the facility not qualify for exemption.

CEQA AND OTHER LEGAL REFERENCES

31. The action to adopt Waste Discharge Requirements for an existing facility is exempt from the provisions of the California Environmental Quality Act (CEQA) in accordance with Title 14, California Code of Regulations, Section 15301.
32. This Order requires the Discharger to submit technical reports as authorized under CWC Section 13267(b)(1), which states in part:

“In conducting an investigation specified in subdivision (a), the Regional Board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the Regional Board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the Regional Board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.”

33. The technical reports required by this Order and the attached “Monitoring and Reporting Program No. R5-2002-0167” are necessary to assure compliance with these Waste Discharge Requirements. The Discharger operates the facility that discharges the waste subject to this Order.
34. The Regional Board has notified the Discharger, interested agencies, and persons of its intent to prescribe Waste Discharge Requirements for this discharge and has provided them with an opportunity for a public hearing and to submit their written views and recommendations.
35. The Regional Board, in a public meeting, heard and considered all comments pertaining to this facility and discharge.
36. Any person affected by this action of the Regional Board may petition the State Water Resources Control Board to review the action in accordance with Sections 2050 through 2068, Title 23, CCR. The petition must be received by the State Water Resources Control Board, Office of Chief Counsel, within 30 days of the date of issuance of this Order. Copies of the laws and regulations applicable to the filing of a petition are available on the Internet at http://www.swrcb.ca.gov/water_laws/index.html and will be provided on request.

IT IS HEREBY ORDERED that Resolution No. 56-040 be rescinded, and pursuant to Sections 13263 and 13267 of the California Water Code, that Nuevo Energy Company, its agents, successors, and assigns, in order to meet the provisions of Division 7 of the California Water Code and plans, policies, and regulations adopted thereunder, shall comply with the following:

A. Discharge Prohibitions

1. The acceptance, treatment, or discharge of “hazardous waste” is prohibited. For purposes of this Order, the term “hazardous waste” is as defined in Title 23, CCR, §2510, et seq.
2. Discharges of waste to surface water or surface water drainage courses are prohibited.
3. The discharge of waste other than wastewater associated with the production of crude oil is prohibited.
4. The discharge to unlined sumps of wastewater that exceeds maximum salinity limits described in Finding No. 19 is prohibited after **31 December 2003**.

B. Discharge Specifications

1. Wastewater discharges to unlined sumps that do not meet the prescriptive construction criteria for classified waste management units specified in Title 27, CCR, Section 20005, et seq., shall not contain constituents exceeding the following salinity limits:

Parameter

Maximum Concentration

Electrical Conductivity @ 25° C	1,000 µmhos/cm
Chloride	200 mg/L
Boron	1 mg/L

2. Wastewater shall only be discharged to, and shall be confined to, the sumps described in Finding No. 7 and depicted on Attachment B.
3. Containment berms for sumps shall be designed and maintained to prevent leakage, whether from erosion, slope failure, animal burrowing, or some other cause.
4. The sumps shall have sufficient freeboard to prevent overtopping as a result of heavy successive precipitation events, high velocity winds, or seismic shaking. In no case shall there be less than 2 feet (measured vertically) of freeboard.
5. Precipitation and drainage control systems shall be designed, constructed, operated, and maintained to accommodate the anticipated volume of precipitation and peak flows from surface runoff under 100 year, 24 hour precipitation conditions. Annually, prior to the anticipated rainy season, any necessary erosion control measures shall be implemented, and any necessary construction, maintenance, or repairs of precipitation and drainage control facilities shall be completed to prevent erosion or flooding of the sumps.
6. The sumps shall either be free of oil or effectively netted to preclude entry of wildlife in accordance with Title 14, CCR, §1778(b)(3).
7. Public contact with wastewater shall be precluded through such means as fences, signs, and other acceptable alternatives.
8. The Discharger shall operate and maintain the wastewater sumps in a manner that prevents liquids, precipitates, and sludges from concentrating to hazardous levels.
9. Neither the treatment nor the discharge shall cause a nuisance or condition of pollution as defined by the California Water Code, §13050.

C. Provisions

1. The Discharger shall comply with the attached Monitoring and Reporting Program No. R5-2002-0167, which is part of this Order, and any revisions thereto as ordered by the Executive Officer.
2. The Discharger shall comply with those applicable sections of the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements* (Standard Provisions) dated 1 March 1991, which are attached to, and by reference, a part of this Order. To the extent that the Standard Provisions are inconsistent with any terms, conditions, or requirements in this Order, this Order shall govern.
3. The Discharger may be required to submit technical reports as directed by the Executive Officer.

4. The Discharger shall notify Regional Board staff in writing of any proposed change in ownership or responsibility for the facility. This notification shall be given 90 days prior to the effective date of the change and shall be accompanied by an amended Report of Waste Discharge and any technical document needed to demonstrate continued compliance with this Order. In the event of any change in ownership of the wastewater facility, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Regional Board.
5. The Discharger shall maintain a copy of this Order and make it available at all times to facility operating personnel, who shall be familiar with its contents, and to regulatory agency personnel upon request.
6. The Discharger shall immediately notify Regional Board staff of any flooding, equipment failure, slope failure, or other change in site conditions, which could impair the integrity of waste containment facilities or precipitation and drainage control structures.
7. The Regional Board will review this Order periodically and will revise these requirements when necessary.

COMPLIANCE SCHEDULE

8. The Discharger, whose wastewater effluent currently exceeds the numerical limitations established in Discharge Specification B.1, shall submit a plan for achieving compliance and bring the facility into compliance with this Order in accordance with the time schedule in Provision C.9. To achieve compliance, the Discharger must demonstrate that:
 - a. The wastewater effluent discharged to the sumps will be within the numerical limitations established in Discharge Specification B.1; or
 - b. The discharge will be in compliance with Title 27; or
 - c. The wastewater will be disposed of in some manner in compliance with all applicable laws.
9. The Discharger shall comply with the following time schedule for compliance with this Order:

<u>Task Description</u>	<u>Due Dates</u>
Submit final plan for achieving compliance with this Order	Within 30 days following adoption of the Order
Submit Compliance Progress Reports	31 December 2002 31 March 2003 30 June 2003 30 September 2003
Achieve compliance with Discharge Prohibition A.4	31 December 2003

10. If the Discharger chooses to construct surface impoundments in accordance with Title 27, the Discharger shall submit a Report of Waste Discharge by **31 January 2003**.

I, THOMAS R. PINKOS, Acting Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 6 September 2002.

THOMAS R. PINKOS, Acting Executive Officer

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