CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2002-0225

WASTE DISCHARGE REQUIREMENTS
FOR
ALPINE PACKING COMPANY, INC.
WASTEWATER TREATMENT SYSTEM
SAN JOAQUIN COUNTY

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

1. Alpine Packing Company, Inc. (hereafter Discharger) submitted a Report of Waste Discharge (RWD) on 17 December 2001 to treat and dispose of process wastewater generated in a meat processing facility. Tentative WDRs were first circulated on 10 April 2002, and based on comments received, the WDRs were revised and recirculated on 15 October 2002.

2. The RWD was prepared to update existing Waste Discharge Requirements (WDRs) Order No. 92-054. Order No. 92-054 is no longer consistent with the plans and policies of the Regional Board.

3. The Discharger owns the property where the wastewater is generated, stored, treated, and land applied. The Discharger also operates the facility.

4. The facility is in Section 9, T2N, R6E, MDB&M, at 9900 Lower Sacramento Road, Stockton in San Joaquin County. The location of the facility is shown on Attachment A, which is attached hereto and is made part of this Order by reference. The Assessor's Parcel Number is 084-080-01.

WASTEWATER GENERATION

5. The Discharger receives and processes various meat products, including raw meat products and processed meat products. Raw products include beef, pork and lamb (which includes chucks, brisket, ribs, loins, rounds, flanks, etc.). Processed meats include sausages, hams, bologna, salami, pork products, and poultry products.

6. Raw meats are processed by deboning, sawing, trimming, scaling, packing, and/or wrapping. Processed meat processing includes cutting, slicing, pumping, injecting, tumbling, grinding, blending, smoking, chilling, packaging, wrapping, and packing.

7. A schematic of the facility is presented on Attachment B, which is attached hereto and made part of this Order by reference.

8. Chemicals used in cleaning activities are presented below:

Product Name	Strength	Chemical
Bleach	5%	Sodium Hypochlorite
Century No. 258	40-50%	Sodium Hydroxide
Dura Foam	5-15%	Potassium Hydroxide

Product Name	Strength	Chemical
Kick No. 301	5%	Sodium Dichloroisocyanurate
Trolley Wash No. 245	80%	Sodium Hydroxide

WASTEWATER SYSTEM

9. Wastewater is collected in floor drains within the facility. Some solids are removed by the floor drain screens. From the floor drains, wastewater is discharged to one of two sumps, and is then piped to Pond No. 1. A rendering company regularly removes solids that settle in the sumps and solids removed from floor drains.

10. The wastewater treatment system consists of two sumps, four unlined wastewater ponds (without aeration), a pumping station, and a 14-acre land treatment unit. The ponds are estimated to be approximately 10 to 14 feet deep.

11. Wastewater flows between ponds at levels that are set by pipes installed in the berms. This results in minimal fluctuation of wastewater levels. Therefore the ponds provide only a small amount of storage capacity.

12. The Discharger has collected wastewater samples in accordance with its Monitoring and Reporting Program and for the RWD preparation. Treated wastewater samples were collected from the wastewater pond prior to discharge to the land treatment unit. The average wastewater quality for samples collected from 1 January 2001 to 26 August 2002 is presented in the table below.

Analyte	Units	Minimum/Maximum/Average
Total Kjeldahl Nitrogen	mg/l	5/60/27
Nitrate as N	mg/l	ND/ND/ND
Biochemical Oxygen Demand[1]	mg/l	108[1]
Fixed Dissolved Solids	mg/l	580/1670/1280
Volatile Dissolved Solids[1]	mg/l	140[1]
pH	Std.	6.9/8.8/NA

[1] One sample collected on 19 November 2001.

13. The flow rate of wastewater discharged to the land treatment unit was measured after repair of a wastewater flow rate meter in January 2001. In the time period from January 2001 to August 2002, the flow rate to the land treatment unit has averaged approximately 33,600 gpd. Flow rates varied from no discharge to approximately 203,000 gpd; however, discharges that occurred on Saturday, Sunday, or holidays were added to the flow recorded on Monday when the meter was read. The Discharger does not currently meter the volume of wastewater entering the ponds. Upon adoption of this Order, the Discharger will be required to record the wastewater flow rate whenever wastewater is discharged from the ponds to the land treatment unit and to install a meter to record the volume of wastewater discharged into the ponds.

14. As part of the RWD, the Discharger submitted a water balance; however, it did not evaluate storage requirements for seasonal conditions when wastewater could not be applied to land. Staff estimated a wastewater flow rate into the ponds of approximately 750,000 gallons per month

(25,000 gallons per day [gpd]), and believe storage of wastewater will likely be required for the months of December, January, and February. The Discharger's RWD identified approximately 1,538,000 gallons of total pond storage capacity, nearly all of which is unavailable as described above. The Discharger is required to further evaluate wastewater storage capacity and propose a method to fully comply with the terms of this Order.

15. Boiler and heat exchanger feed water is treated prior to use with a pair of alternating ion exchange water softeners. The water softeners are regenerated in place. Regeneration brine is discharged to the wastewater ponds. The Discharger estimates that 100 to 150 pounds of sodium chloride is used for regeneration and operational purposes per five-day workweek.

16. Finding No. 5 of WDRs Order No. 92-054 requires salts used in the brining process to be completely used in the brining process. The Discharger shall continue to prevent discharge of brines to the process wastewater system.

LAND APPLICATION SYSTEM

17. Wastewater is flood irrigated on a 14-acre land treatment unit, as shown on Attachment B. The land treatment unit is bermed on the north, east, and south sides. A tailwater collection ditch is at the west side of the land treatment unit. An additional 66-acres of property is available for land treatment but is presently used as a buffer between the land treatment units and the surrounding residential developments. Application of wastewater to the additional 66-acre areas is acceptable pending submittal of a technical report describing improvements, installation of additional groundwater monitoring wells, and approval of the Executive Officer.

18. Sprinkler irrigation of wastewater is acceptable if it complies with the "Land Treatment Unit Requirements" of this Order, and if the land treatment unit has been adequately prepared to receive wastewater.

19. The Discharger submitted a Cropping Plan for the land treatment unit on 24 April 2001. The plan presents a nitrogen balance and recommends planting alfalfa, clover, corn, and grass. The plants will take up all the nitrogen in the wastewater. Crops other than those presented in the Cropping Plan are acceptable as long as they take up all nitrogen applied, as described by the Effluent Limitations and the Land Treatment Unit Requirements.

20. Based on the anticipated quality of wastewater and the average flow rate from January 2001 to August 2002, the following loading rates to the 14-acre land treatment system are anticipated.

Analyte	Average Concentration (mg/l)	Total Pounds Annual Basis	lbs/ac•year	lbs/ac•day
Total Kjeldahl Nitrogen	27	2,774	198	0.5
Fixed Dissolved Solids	1,280	131,035	9,360	25.6
Biochemical Oxygen Demand	108	10,950	782	2.2

21. During the winter months, wastewater is applied to the cropland above agronomic rates, which may result in degradation of groundwater quality. During the summer months, supplemental

irrigation water is required to maintain the crops. Application of wastewater to the land treatment unit will occur year round, including the wet season.

22. According to *Process Design Manual, Land Treatment of Municipal Wastewater*, published by the United States Environmental Protection Agency (US EPA Publication No. 625/1-81-013), storage must be provided when climatic conditions halt operations or require reduced loading rates. Because the water balance is inadequate, the Discharger must evaluate the storage capacity of the wastewater ponds.

23. As shown on Attachment B, stormwater is discharged to a stormwater control ditch that is pumped to the land treatment unit when climatic conditions allow. Tailwater or stormwater that runs off the land treatment unit is discharged to a tailwater collection ditch which discharges to the stormwater control ditch. Because stormwater is mixed with industrial wastewater, disposal of the water to surface water drainage courses is not acceptable. The Discharger is required to evaluate whether it can fully contain its stormwater/wastewater mixture.

24. The average TDS concentration from January 2001 to August 2002 in the wastewater applied to land is 1,280 mg/l. Excessive application of TDS can result in the accumulation of salts in the soil column and subsequent migration to the underlying groundwater. The Discharger must continue to monitor groundwater quality at the land treatment unit and the wastewater storage ponds. If groundwater monitoring shows that this discharge results in an increased TDS level in the groundwater, then the Discharger will be required to modify the discharge such that there is no impact.

GROUNDWATER CONDITIONS

25. Four groundwater monitoring wells were installed in November 2001 as part of preparation of the RWD. The wells were sampled on 29 November 2001, 23 April 2002, and 8 July 2002. Wells MW-1 and MW-4 were dry (MW-4 was bailed dry and never recovered) during the 8 July 2002 sample event. The well locations are shown on Attachment B. Groundwater exists approximately 40-50 feet below ground surface and the gradient was to the southwest during the November and April sample events. The groundwater gradient could not be established during the July sample event. Well MW-4 is upgradient of the Discharger's land treatment units and wastewater storage ponds. Wells MW-1 and MW-2 are downgradient of land treatment unit. Well MW-3 is located near, but cross-gradient to the wastewater storage ponds. The groundwater quality is summarized in the table below.

Well	Date	Elec. Cond. (µmhos/cm)	TDS (mg/l)	Na (mg/l)	Cl (mg/l)	NO_3 as N (mg/l)	TKN (mg/l)
MW-1	11/29/01	396	980	150	210	<0.5	0.6
MW-1	4/23/02	1,200	828	73.2	55	15.3	<0.5
MW-1	7/8/02			*Well was dry.*			
MW-2	11/29/01	451	880	72	150	<0.5	0.3
MW-2	4/23/02	1,300	794	43.3	125	18.2	<0.5
MW-2	7/8/02	1,460	970	64	99.9	12.2	<0.5
MW-3	11/29/01	1,862	270	120	110	<.5	1.3
MW-3	4/23/02	1,400	925	114	90	29.5	<0.5

Well	Date	Elec. Cond. (µmhos/cm)	TDS (mg/l)	Na (mg/l)	Cl (mg/l)	NO_3 as N (mg/l)	TKN (mg/l)
MW-3	7/8/02	1,600	1,086	120	74.9	30.8	<0.5
MW-4	11/29/01	1,548	290	86	86	<0.5	0.3
MW-4	4/23/02	780	485	42	32	14.2	<0.5
MW-4	7/8/02	*Well was dry.*					

ND denotes Not Detected; detection limit shown in parentheses.

26. As indicated in the table above, based on the sample events, it appears the TDS concentration in the groundwater below the current land treatment unit may be three times higher than that of the groundwater upgradient of the land treatment or wastewater storage areas. Concentrations of sodium and chloride may be higher in wells downgradient of land treatment units or wastewater storage locations. This data, coupled with the reported groundwater gradient to the southwest, indicates that groundwater below the land treatment unit may be impacted by the discharge of wastewater from the facility.

27. The Discharger has stated that groundwater conditions are the result of previous activities at the site when animals were slaughtered and more wastewater was generated. Staff recognizes those conditions but the quality of wastewater presently discharged is worse than the site groundwater quality and therefore some degradation may be due to current activities. Because the groundwater data obtained to date contains some anomalies, this Order requires the Discharger to install additional groundwater monitoring wells and to conduct groundwater and vadose zone monitoring to fully determine whether the discharge is degrading the groundwater.

28. The facility is served by two water supply wells. The primary supply well extends to a depth of approximately 300 feet below ground surface (bgs); the secondary supply well is estimated to be approximately 110 feet bgs. No information on the screen interval was provided in the RWD.

29. The irrigation well locations are located on-site. The wells were sampled on 26 June 2002. The wells produce good quality water as indicated by the sample results presented below:

Constituent	Units	North Irrigation Well	South Irrigation Well
Calcium	mg/l	69	78
Magnesium	mg/l	24	30
Potassium	mg/l	5	4
Sodium	mg/l	19	25
Bicarbonate	mg/l	280	350
Sulfate	mg/l	18	29
Chloride	mg/l	53	40
Nitrate as N	mg/l	4.6	7.6
pH	Std.	7.6	7.4
Elec. Conductivity	µmhos/cm	662	755

SITE SPECIFIC CONDITIONS

30. Local land use consists of industrial, agricultural and residential uses. The facility has been used as a meat packing facility since the 1940s. The topography of the surrounding area is level. The

prevailing wind direction is from the northwest in the summer and to the southeast in the winter months.

31. Domestic waste at the facility is discharged to a septic tank and leachfield. The septic tank and leachfield system is regulated by the San Joaquin County Department of Public Health.

32. The facility and land treatment units are outside the 100-year flood zone.

33. Surficial soil is described as poorly drained clay. Permeability is slow (0.06-0.2 in/hour).

34. The mean annual rainfall is 13.38 inches and the 100-year return annual total is 21.83 inches. The annual evapotranspiration rate is 51.03 inches.

35. The facility is within the Lower Mokelumne Hydrologic Area (No. 531.20), as depicted on interagency hydrologic maps prepared by the Department of Water Resources in August 1986.

SPECIAL CONSIDERATIONS FOR FOOD PROCESSING WASTE AND SITE SPECIFIC CONCERNS

36. Excessive application of food processing wastewater to land treatment units can create objectionable odors, soil conditions that are harmful to crops, and degradation of underlying groundwater by overloading the shallow soil profile and causing pollutants (organic carbon, nitrate, dissolved solids, and metals) to percolate below the root zone. If sufficient information becomes available, this Order may be revised to increase or further reduce loading rates as appropriate.

37. According to *Pollution Abatement in the Fruit and Vegetable Industry*, published by the United States Environmental Protection Agency (US EPA Publication No. 625/3-77-0007) (hereafter *Pollution Abatement*), in applying food-processing wastewater to land for biological treatment, the loading of BOD_5 should not exceed 100 lbs/acre•day (average) to prevent development of nuisance conditions.

38. Acidic soil conditions can be detrimental to land treatment system function, and may also cause groundwater degradation. If the buffering capacity of the soil is exceeded and soil pH decreases below 5, naturally occurring metals (including iron and manganese) may dissolve and degrade underlying groundwater. Near neutral pH is also required to maintain adequate active microbial populations in the soil.

39. The RWD states the facility employs a number of cleaning/sanitation agents; these agents can result in substantial pH variation. Shock loadings of acidic or basic waste can interfere with the microorganisms responsible for oxidation of the organic waste constituents and *Pollution Abatement* recommends that water applied to crops have a pH within 6.4 to 8.4 to protect crops from damage. Therefore, wastewater effluent limits include upper and lower limits on the pH.

40. Monitoring data collected since January 2001 indicates an average total Kjeldahl nitrogen concentration of approximately 27 mg/l, nitrate has not been detected in the facility wastewater. Using the average flow rate of 33,600 gpd to the land application area, the nitrogen loading rate is

approximately 200 lbs/ac•year. The loading rate is within the range of typical crop uptake capacity.

41. The wastewater contains Fixed Dissolved Solids (FDS) concentrations of up to 1,670 mg/l; TDS in the background groundwater ranged from 290–485 mg/l in two sampling events. The groundwater monitoring data shows that the Discharger may have degraded the groundwater with salt; however, a better definition of background groundwater quality is needed.

42. The water balance contained in the RWD indicated the land treatment units are insufficient to accommodate the current wastewater flow and design seasonal precipitation for a 100-year return period for the waste water application areas. This Order's provisions require the Discharger to evaluate the long-term adequacy of the land treatment units and the need for wastewater storage ponds. In the interim, the Discharger is required to develop a contingency plan, in the event that the land treatment units cannot hold all the wastewater and stormwater produced by a 100-year annual precipitation event.

BASIN PLAN, BENEFICIAL USES, AND REGULATORY CONSIDERATIONS

43. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition* (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Resources Control Board. Pursuant to §13263(a) of the California Water Code, waste discharge requirements must implement the Basin Plan.

44. Surface water drainage in the area of the site is to Mosher Slough, which is tributary to the Sacramento San Joaquin Delta.

45. The beneficial uses of the Sacramento San Joaquin Delta are municipal and domestic supply, agricultural irrigation, stock watering, industrial process, industrial service supply, contact recreation, other noncontact recreation, warm fresh water habitat, cold fresh water habitat, warm water migration, cold water migration, warm water spawning, wildlife habitat, and navigation.

46. The beneficial uses of underlying groundwater are municipal and domestic water supply, agricultural supply, industrial service supply, and industrial process supply.

47. The Basin Plan establishes numeric and narrative water quality objectives for surface and groundwater within the basin. Numeric water quality objectives are limits already quantified. Narrative water quality objectives are unquantified limits expressing the level of protection for beneficial uses from specific constituents and categories of constituents. Objectives for chemical constituents, toxicity, and tastes and odors of substances in groundwater take both forms. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, or animals. The chemical constituent objective states groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use.

48. The Basin Plan sets forth a procedure for translating narrative water quality objectives into numeric water quality objectives, directing that relevant numeric criteria and guidelines developed and published by other agencies and organizations and any other relevant information be considered.

49. The California Water Code (CWC) requires that waste discharge requirements implement the Basin Plan and consider the beneficial uses and water quality objectives reasonably required to protect the uses, as well as other waste discharges and conditions in the area and groundwater. The Basin Plan requires that waste discharge requirements apply the most stringent objective for each constituent to ensure that discharges do not cause groundwater to contain a chemical constituent, toxic substance, radionuclide, pesticide, or taste or odor producing substance in a concentration that adversely affects any beneficial use.

50. The Basin Plan procedure for applying water quality objectives as terms of discharge in waste discharge requirements requires maintenance of the existing quality of groundwater except where the Board determines an adverse change is consistent with Resolution 68-16. Resolution 68-16 requires the Board to regulate waste discharges in a manner that maintains high quality waters of the State. Any change in quality can only occur after full application of best practicable treatment and control (BPTC) of the waste and must be consistent with maximum benefit to the people of the State, not unreasonably affect a beneficial use, and not result in water that exceeds a water quality objective.

51. To protect the designated use of municipal and domestic supply, water quality objectives correspond to maximum contaminant levels (MCLs) specified in the provisions of Title 22, California Code of Regulations.

52. Protection of agricultural supply requires consideration of narrative objectives and translators. Guidelines for identifying the quality of irrigation water necessary to sustain various crops were compiled by Ayers and Westcot in 1985 (Food and Agriculture Organization of the United Nations – Irrigation Drainage Paper No. 29). The Agricultural Guidelines estimate the potential hazards to crop production associated with long term use of the particular water being evaluated. The Agricultural Guidelines categorize ranges of concentration of each constituent as having "No Problem – Increasing Problems – Severe Problems" based on large numbers of field studies and observations, and carefully controlled greenhouse and small plot research. In general, crops sensitive to sodium or chloride are most sensitive to foliar absorption from sprinkler-applied water. Bicarbonate causes problems when fruit crops or nursery crops are sprinkler irrigated during periods of very low humidity and high evaporation. The following table contains numerical criteria from the Agricultural Guidelines identified as necessary for protection of a range of crops under various circumstances, but the most stringent is not necessarily the concentration that ensures no adverse affect on any nonagricultural beneficial use.

Problem and Related Constituent	No Problem	Increasing Problem
Salinity of Irrigation Water (EC, µmhos/cm)	< 700	700 – 3,000
Salinity of Irrigation Water (TDS, mg/L)*	< 450	450 – 2,000
Specific Ion Toxicity		
from Root absorption		
Sodium (mg/L)	< 69	69 – 207
Chloride (mg/L)	< 142	142 – 355

Problem and Related Constituent	No Problem	Increasing Problem
Boron (mg/L)	< 0.5	0.5 – 2.0
from Foliar Absorption		
Sodium (mg/L)	< 69	> 69
Chloride (mg/L)	< 106	> 106
Miscellaneous		
NH_4-N (mg/L) (for sensitive crops)	< 5	5 – 30
NO_3-N(mg/L) (for sensitive crops)	< 5	5 – 30
HCO_3 (mg/L) (only with overhead sprinklers)	< 90	90 - 520
PH	normal range = 6.5 – 8.4	

* Assumes an EC:TDS ratio of 0.6:1

53. The Agricultural Guidelines present the maximum EC that various crops will tolerate before experiencing percent crop reductions (i.e., 0, 10, 25, and 50%). Data below summarizes irrigation water EC data (in µmhos/cm) for crops cultivated in the vicinity of the facility at various EC:

Crop	0% Reduction	10% Reduction
Alfalfa	1,300	2,200
Hay (Barley)	4,000	4,900

54. The Agricultural Guidelines indicate that boron sensitive crops such as stone fruit and grapes may show injury when irrigated with boron ranging from 0.5 to 1.0 mg/L and show reduced yield and vigor when irrigated with boron ranging from 1.0 to 2.0 mg/L.

55. A long-term problem facing the Sacramento-San Joaquin Delta is increasing salinity in waterways and in groundwater, a process accelerated by man's activities and particularly affected by intensive irrigated agriculture. Basin Plan policies and programs focus on controlling the rate of increase of salt in the Basin from all controllable sources, and particularly point sources of waste. The Board is presently engaged in developing a Total Maximum Daily Load for the San Joaquin River. Proactive management of waste streams by dischargers to control addition of salt through use is a reasonable expectation.

LAND TREATMENT UNIT (LTU) – LAWS AND REGULATIONS

56. Successful treatment and control in the application of waste constituents to land is an inexact science highly dependent upon the constituent, soils, climate, other practices that affect the property, and sound waste management and control. The process depends upon attenuation (decomposition, immobilization, and transformation) in the soil profile and consumption from the root zone by crops to remove waste constituents. Excessive application rates for waste constituents can result in vector conditions and anaerobic waste or soil conditions that can create nuisance odor conditions. Excessive application rates can also overload the shallow soil profile and root zone to impair crops, crop waste constituent consumption, and the waste attenuation process itself, and lead to leaching of waste constituents below the treatment zone. Excessive application can also result in dissolution of soil minerals such as calcium and magnesium. Excessive hydraulic applications, even if from use of supplemental fresh water, can flush waste constituents, decomposition by-products, and dissolved minerals out of the treatment zone. Absent sufficient

sustained reliable attenuation of residual waste constituents in the remaining soil profile, the constituents will eventually leach to groundwater. Temporary storage of residual waste constituents within the soil column can misrepresent the effectiveness of the process.

57. CWC §13173(b) defines designated waste as: "Nonhazardous waste that consists of, or 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..."

58. Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste, as set forth in Title 27, California Code of Regulations, §20005 et seq., specify types of waste that must be fully contained and prescribes standards for containment, including for designated waste.

59. Title 27, §20210, specifies criteria for containment and disposal of designated waste constituents on land. Liquid designated waste in surface impoundments is subject to full containment with double liners in accordance with standards prescribed in Title 27. Land treatment of designated waste is subject to standards prescribed by Title 27 for a Class I or Class II land treatment unit (LTU). Title 27, §20164, defines LTU as a, "waste management unit (Unit) at which liquid and solid waste is discharged to, or incorporated into, soil for degradation, transformation, or immobilization within the treatment zone." It defines treatment zone as, "a soil area of the unsaturated zone of a land treatment unit within which constituents of concern are degraded, transformed, or immobilized."

60. Designated waste subject to the Title 27 prescriptive and performance standards for an LTU may qualify for conditional exemption from Title 27 pursuant to §20090(b). A discharge of decomposable waste that need not be managed as a hazardous waste can be exempted under §20090(b) if all waste constituents are treated and controlled to a degree that the discharge complies with the Basin Plan. Documentation for such exemption must at least equal the scientific rigor of the test plot required as a prerequisite of approval of a Title 27 LTU.

61. Performance standards of Title 27 applicable to LTUs require that:

    a. Prior to discharge, the Discharger must demonstrate that the LTU can completely degrade transform, or immobilize designated waste constituents in the treatment zone, not to exceed five feet below the initial ground surface (§20250(b));

    b. Prior to discharge, the Discharger must establish the appropriate design depth of the treatment zone for each designated waste constituent, not to exceed five feet below the initial ground surface (§20250(b));

    c. Prior to discharge, the Discharger must establish a site-specific Water Quality Protection Standard (§20390) for each designated waste constituent (§20395), the concentration limits (§20405), and the Point of Compliance and all Monitoring Points (§20405);

    d. Specific standards are prescribed by which to monitor water quality (§20420), including a detection monitoring program (§20420), an evaluation monitoring program (§20425), and an unsaturated zone monitoring program for the LTU (§20435), which requires soil-pore liquid monitoring to ensure effective operation.

62. Pursuant to §20090(b), the Board may exempt a discharge from Title 27 only if:

    a. The Regional Board issues waste discharge requirements;

    b. The waste discharge requirements implement the Basin Plan and allow discharge only in accordance with the Basin Plan; and

    c. The wastewater is nonhazardous waste and need not be managed according to Title 22, CCR, Division 4.5, Chapter 11, as a hazardous waste.

ANTI-DEGRADATION ANALYSIS

63. State Water Resources Control Board (State Board) Resolution No. 68-16 (hereafter Resolution No. 68-16) requires that waste be discharged in a manner that maintains the high quality waters of the state. Any change in quality can occur only after full application of best practicable treatment and control (BPTC) of the waste, and must be consistent with maximum benefit to the people of the State, not unreasonably affect a beneficial use, and not result in water that exceeds a water quality objective. Where the water quality objective is exceeded in background water quality but nonetheless beneficially used or designated for beneficial use, the background water quality cannot be degraded.

64. Antidegradation factors have been considered pursuant to Resolution No. 68-16. At this time, it is unknown whether the project as proposed will degrade groundwater with dissolved solids and/or organics, or create nuisance odors from organics while waste is ponded and in the manner applied to land. Degradation of the groundwater with organics and/or dissolved solids is not consistent with maximum benefit to the people of the State. If it were, the Discharger would have to demonstrate its treatment as being best practicable treatment and control (BPTC). The Discharger has made no BPTC demonstration. At this time, the project as proposed by the Discharger is consistent with Resolution 68-16. However, once background groundwater quality is fully evaluated, staff will review the data to determine whether the discharge is degrading the groundwater. If it is, the Discharger will be required to modify the discharge such that there is no degradation, comply with Resolution 68-16, or apply for coverage under Title 27 of the CCR.

GROUNDWATER DISCHARGE ANALYSIS – LAWS, RULES, AND REGULATIONS

65. For the waste constituents present in the discharge in significant concentrations, the water quality objectives determined by the translator process from narrative objectives are all higher than the observed background water quality, except for TDS. Where background water quality is unaffected by other discharges and greater than water quality objectives, the background water quality establishes the water quality limit. Within the San Joaquin Valley, the salinity of the groundwater has been degraded through years of agricultural operations. At this facility, there does not appear to be a direct upgradient source of the salinity; therefore, the background water quality value for TDS becomes the governing water quality objective. However, the Discharger is required to further define background groundwater quality.

66. The discharge is nonhazardous, but exhibits characteristics of "designated waste," as the concentrations of some waste constituents when treated, stored, and applied to land have potential for causing exceedances of water quality objectives or adversely affecting beneficial uses. The

discharge contains decomposable waste constituents (e.g., organic carbon and nutrient compounds) and inorganic dissolved solids in concentrations that are greater than water quality objectives.

67. The discharge must be categorized as designated waste because of these constituents and subjected to the full containment provisions of Title 27 unless it can be demonstrated that constituents of concern, after release, are effectively and consistently removed by attenuation in the soil profile and the discharge fully compliant with the Basin Plan. For waste applied to the land treatment unit, it means a demonstration that controlled land treatment removes waste decomposable constituents within the LTU and, for those not totally decomposable, passes through concentrations that will cause no degradation of groundwater.

68. The waste that is discharged to land contains TDS (and presumably sodium and chloride) well in excess of governing background quality and these constituents are not effectively removed by the LTU. The practical demonstration of removal of dissolved solids as projected by the Discharger has not been demonstrated as required for an LTU. The Discharger has not established the design LTU depth that is dependent upon crop. The Discharger has not established an evaluation monitoring program, unsaturated zone monitoring program, or water quality protection standards for each waste constituent. Inorganic dissolved solids can be effectively controlled by means of source control, treatment, or containment. Source control includes best management practices of selective and judicious chemical use (e.g., potassium-based cleaning solutions instead of sodium-based) and waste stream isolation or segregation where possible (in particular separate handling of high strength wastewater, ion exchange regeneration brine, boiler blowdown, and cleaning chemicals). Treatment technology includes reverse osmosis and ion exchange applied to the wastewater, but we have no evidence that any have been evaluated or applied to the discharge. Containment technology includes Title 27 prescriptive standards where appropriate, but there is no evidence that these were considered for implementation for all applicable waste streams.

69. In regards to decomposable waste, the Discharger has not, among other things, demonstrated the appropriate loading of the LTU. However, as a general guide, *Pollution Abatement* recommends an LTU for food-processing wastewater not exceed a loading of BOD_5 of 100 lbs/acre•day to prevent development of nuisance odor conditions. The RWD did not present the loading rate due to incomplete data. Staff's evaluation of available data indicates the discharge is well below the guidance described above.

OTHER REGULATORY CONSIDERATIONS

70. CWC § 13267(b) provides that: "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."

71. The technical reports required by this Order and the attached "Monitoring and Reporting Program No. R5-2002-0225" are necessary to ensure compliance with these waste discharge requirements. The Discharger operates the facility that discharges the waste subject to this Order.

72. Federal regulations for storm water discharges were promulgated by the U.S. Environmental Protection Agency on 16 November 1990 (40 CFR Parts 122, 123, and 124). The State Board adopted Order No. 97-03-DWQ (General Permit No. CAS000001) specifying waste discharge requirements for discharges of storm water associated with industrial activities, and requiring submittal of a Notice of Intent by all affected industrial dischargers. The Discharger is required to obtain coverage under General Permit No. CAS000001 or submit a Notice of Non-Applicability as appropriate.

73. State regulations pertaining to water quality monitoring for waste management units are found in Title 27. These regulations prescribe procedures for detecting and characterizing the impact of waste constituents on groundwater. While the facility has been found exempt from Title 27, the data analysis methods of Title 27 are appropriate for determining whether the discharge complies with the terms for protection of groundwater specified in this Order.

74. The California Department of Water Resources sets standards for the construction and destruction of groundwater wells (hereafter DWR Well Standards), as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 94-81* (December 1981). These standards, and any more stringent standards adopted by the State or County pursuant to CWC §13801, apply to all monitoring wells.

75. The action to update waste discharge requirements for this facility is exempt from the provisions of the California Environmental Quality (CEQA), in accordance with Title 14, California Code of Regulations (CCR), § 15301.

76. As stated in CWC, §13263(g), discharge is a privilege, not a right, and this conditional authorization to discharge while obtaining technical documentation for a future decision does not in any way create a vested right to continue the discharge. Failure to provide the level of management required preclude conditions that threaten pollution or nuisance will be sufficient reason to modify, revoke, or enforce this Order, as well as prohibit further discharge.

PUBLIC NOTICE

77. All the above and the supplemental information and details in the attached Information Sheet, incorporated by reference herein, were considered in establishing the following conditions of discharge.

78. The Discharger and interested agencies and persons were notified of intent to prescribe WDRs for this discharge and provided an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

79. In a public meeting, all comments pertaining to the discharge were heard and considered.

IT IS HEREBY ORDERED that Order No. 92-054 is rescinded and pursuant to Section 13263 and 13267 of the California Water Code, Alpine Packing Company, its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

Note: Other prohibitions, conditions, definitions, and the method of determining compliance are contained in the attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements" dated 1 March 1991.

A. Discharge Prohibitions:

1. Discharge of wastes (including tailwater from the land treatment units and stormwater which has come in contact with wastewater) to surface waters or surface water drainage courses is prohibited.

2. The discharge shall not cause the degradation of any water supply.

3. Bypass or overflow of untreated or partially treated waste is prohibited.

4. Discharge of waste classified as 'hazardous,' defined in Section 20164 of Title 27, CCR, or 'designated', as defined in Section 13173 of the California Water Code, is prohibited.

5. The discharge of wastewater other than to the land treatment units identified in Finding No. 17 is prohibited.

6. The application of solid waste, or settled solids from the sumps, to the land treatment units is prohibited.

7. The discharge of domestic waste to the industrial wastewater treatment system is prohibited.

8. The discharge of industrial waste to the domestic wastewater treatment system (septic system) is prohibited.

9. Establishment of a slaughterhouse is prohibited.

10. Discharge of salt wastes from meat processing is prohibited. Salts shall be used completely in the brining process and shall not be discharged with the process wastewater.

B. Discharge Specifications:

1. The monthly average discharge from the facility into the wastewater ponds shall not exceed 40,000 gallons per day.

2. Neither the treatment nor the discharge shall cause a nuisance or condition of pollution as defined by the California Water Code, Section 13050.

3. No waste constituent shall be released or discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of the Groundwater Limitation.

4. Objectionable odors originating at this facility shall not be perceivable beyond the limits of the processing facility and designated land treatment unit property owned by the Discharger.

5. As a means of discerning compliance with Discharge Specification No. B.4, the dissolved oxygen content of wastewater in ponds shall not be less than 1.0 mg/l at any time, as measured within one foot of the water surface.

6. The Discharger shall operate all systems and equipment to maximize treatment of wastewater and optimize the quality of the discharge.

7. The Discharger's wastewater treatment system shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

8. No physical connection shall exist between wastewater piping and any domestic water supply or other domestic/industrial supply/agricultural well without an air gap or approved reduced pressure device.

9. Wastewater ponds shall be managed to prevent breeding of mosquitoes. In particular,
   a. An erosion control program shall be implemented to ensure that small coves and irregularities are not created around the perimeter of the water surface.
   b. Weeds shall be minimized through control of water depth, harvesting, or herbicides.
   c. Dead algae, vegetation, and debris shall not accumulate on the water surface.

10. The wastewater treatment system shall have sufficient capacity to accommodate wastewater flow, seasonal precipitation, and storage when the land treatment unit is saturated and unavailable for land application of wastewater. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100-years, distributed monthly in accordance with historical rainfall patterns.

11. Freeboard in any pond shall never be less than two feet as measured from the water surface to the lowest point of overflow.

12. On or about 15 October of each year, available pond storage capacity shall at least equal the volume necessary to comply with Discharge Specifications B.10 and B.11.

C. Effluent Limitations

1. Wastewater discharged to the LTUs shall not exceed the following monthly average effluent limits, or any lower limits necessary to comply with the Groundwater Limitations:

Constituent	Concentration
Total Dissolved Solids	1,300 mg/l

2. The maximum total nitrogen loading to the land treatment unit shall not exceed the agronomic rate for Plant Available Nitrogen (PAN) for the type of crop to be grown, as specified in the most recent edition of the Western Fertilizer Handbook. PAN shall be calculated as 100% of the total nitrogen content of the waste, unless and until the Discharger demonstrates that another proportion is technically justified, as described in Provision G.6.

3. The maximum BOD_5 loading to the land treatment unit shall not exceed any of the following unless and until the Discharger demonstrates that another proportion is technically justified, as described in Provision G.5.

   a. 100 lbs/acre•day on any single day;

   b. The maximum loading rate that ensures that the discharge will not create a nuisance.

4. The wastewater discharged to the land treatment unit shall not have a pH of less than 6.5 or greater than 8.5.

D. Land Treatment Unit Requirements:

1. The discharge shall be distributed uniformly on adequate acreage in compliance with the Discharge Specifications and Effluent Limitations.

2. As described in the April 2001 cropping plan, crops shall be grown on the application area. Crops shall be selected based on nutrient uptake capacity, tolerance to high soil moisture conditions, and consumptive use of water and irrigation requirements. Cropping activities shall be sufficient to take up all the nitrogen applied. Crops shall be harvested and removed from the application area.

3. Hydraulic loading of wastewater and irrigation water shall be at reasonable agronomic rates designed to minimize the percolation of process wastewater and irrigation water below the root zone (i.e., deep percolation)

4. The discharge of process wastewater, including runoff, spray or droplets from the irrigation system, shall not occur outside the boundaries of the land treatment unit.

5. Wastewater conveyance lines shall be clearly marked as such. Wastewater controllers, valves, etc., shall be posted with advisory signs; all equipment shall be of a type, or secured in such a manner, that permits operation by authorized personnel only.

6. Public contact with wastewater shall be precluded through such means as fences, signs, and other acceptable alternatives. Signs with proper wording of sufficient size shall be placed at areas of access and around the perimeter of the land treatment unit to alert the public of the use of wastewater.

7. The land treatment unit shall be managed to prevent breeding of mosquitoes. More specifically:

   a. All applied wastewater must infiltrate completely within 24 hours.

b. Ditches not serving as wildlife habitat should be maintained free of emergent, marginal, and floating vegetation.

c. Low pressure pipelines, unpressurized pipelines, and ditches that are accessible to mosquitoes shall not be used to store wastewater.

8. The Discharger may not discharge wastewater to the land treatment unit 24 hours before predicted precipitation, during periods of precipitation, and for at least 24 hours after cessation of precipitation, or when soils are saturated.

9. Application of wastewater to the land treatment unit shall only occur by flood irrigation on furrows graded so as to achieve uniform distribution, minimize ponding and provide for tailwater control. Furrow runs shall be no longer and slopes shall be no greater than what permits reasonably uniform infiltration and maximum practical irrigation efficiency. The minimum furrow slope shall not be less than 0.2%. Application by sprinkler is acceptable if the land treatment unit has been prepared and if the application complies with all other requirements of this order.

10. The land treatment unit shall be allowed to dry for at least 72 hours from the end of wastewater application unless more frequent irrigation is required for crop health.

11. Application of wastewater to the land treatment unit shall be performed in accordance with the approved LTU Operation and Maintenance Plan submitted pursuant to the provisions.

12. There shall be no standing water in the land treatment unit 24 hours after wastewater is applied, except during periods of heavy rains sustained over two or more consecutive days.

13. The wastewater discharge shall not occur within a 50-foot wide buffer zone along any property lines adjacent to properties developed with residences.

14. The resulting effect of the wastewater discharge on the soil pH shall not exceed the buffering capacity of the soil profile.

E. Solids/Sludge Disposal Requirements:

1. Collected screenings, sludge, and other solids removed from process wastewater shall be disposed of in a manner that is consistent with Title 27, Division 2, Subdivision 1 of the CCR and approved by the Executive Officer.

2. Sludge and other solids shall be removed from process equipment, sumps, etc. as needed to ensure optimal operation and adequate hydraulic capacity. Solids drying operations, if any, shall be designed and operated to prevent leachate generation.

3. Storage and disposal of domestic wastewater sludge (septage) shall comply with existing Federal, State, and local laws and regulations, including permitting requirements and technical standards. Sludge and other solids shall be removed from septic tanks as needed to ensure optimal operation and adequate hydraulic capacity. A duly authorized carrier shall haul

sludge, septage, and domestic wastewater.

4. Any proposed change in solids use or disposal practice from a previously approved practice shall be reported to the Executive Officer at least 90 days in advance of the change.

F. Groundwater Limitations:

The discharge, in combination with other sources, shall not cause underlying groundwater to contain waste constituents in concentrations statistically greater than background water quality.

G. Provisions:

1. All technical reports required herein that involve planning, investigation, evaluation, design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code sections 6735, 7835, and 7835.1. To demonstrate compliance with sections 415 and 3065 of Title 16, CCR, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.

2. All of the following reports shall be submitted pursuant to Section 13267 of the California Water Code, and shall be prepared by a California registered professional as described in Provision G.1.

   a. By **20 January 2003,** the Discharger must either apply for coverage or submit a Notice of Non Applicability for Order No. 97-03-DWQ, Discharges of Storm Water Associated With Industrial Activities.

   b. By **20 January 2003** the Discharger shall submit a report showing that it has installed a wastewater flow meter to monitor the flow into the wastewater storage ponds. The meter shall be positioned to monitor the flow from all pipelines from the facility.

   c. By **20 January 2003**, the Discharger shall submit a Wastewater Storage Evaluation Report and Contingency Plan describing the steps it will take if the LTU areas become unavailable for wastewater discharge due to climatic conditions or excessive hydraulic loading.

      The Wastewater Storage Evaluation Report shall include a water balance that evaluates the present storage capacity, wastewater and stormwater generation rates, and land application rates. The report shall describe procedures that will be implemented to provide additional storage in the wastewater ponds for months when wastewater application is limited by climatic or saturated soil conditions. If storage capacity improvements are required, the report shall include a description of the project and a proposed implementation schedule.

      The Contingency Plan shall consider operational alternatives such as restricting water usage, hauling wastewater to a municipal facility, and shutting down portions of the

facility. This Contingency Plan shall be implemented whenever the LTUs are not available for use.

d. By **7 April 2003**, the Discharger shall submit an *LTU Operation and Maintenance Plan*. The O&M Plan shall be prepared in accordance with Attachment C, and shall discuss all aspects of managing the discharge operation to comply with the terms and conditions of this Order, including reducing the salinity of the wastewater. A copy of the O&M Plan shall be kept at the facility for reference by operating personnel and they shall be familiar with its contents.

e. By **7 April 2003**, the Discharger shall submit a Groundwater Monitoring Workplan prepared in accordance with, and including the items listed in, the first section of Attachment D: *"Items to be Included in a Monitoring Well Installation Workplan and a Monitoring Well Installation Report of Results."* The workplan shall describe a proposed expansion to the existing groundwater monitoring network specifically designed to ensure that background water quality is adequately characterized. The monitoring wells shall be designed to yield samples representative of the uppermost portion of the first aquifer underlying the site.

f. By **7 April 2003**, the Discharger shall submit a Vadose Zone Monitoring Workplan. The workplan shall describe proposed vadose zone monitoring locations, proposed sampling techniques, and frequency of sampling designed to ensure that the free draining liquid within the vadose zone is representatively characterized. The purpose of this monitoring is to determine whether the land treatment units are sufficiently treating the wastewater such that the underlying groundwater will not be degraded.

g. By **3 July 2003**, the Discharger shall submit a Monitoring Well Installation Report prepared in accordance with, and including the items listed in, the second section of Attachment D: *"Items to be Included in a Monitoring Well Installation Workplan and a Monitoring Well Installation Report of Results."* The report shall describe the installation and development of the new monitoring wells and explain any deviation from the approved workplan.

h. By **31 December 2004**, the Discharger shall submit a *Background Groundwater and Percolate Quality Study Report*. For each groundwater monitoring parameter/constituent identified in the MRP, the report shall present a summary of monitoring data, calculation of the concentration in background monitoring wells, and comparison of background groundwater quality to that in wells used to monitor the facility. Determination of background quality shall be made using the methods described in Section 20415(e)(10) of Title 27, and shall be based on data from at least four consecutive quarterly (or more frequent) groundwater monitoring events. For each monitoring parameter/constituent, the report shall compare measured concentrations for compliance monitoring wells with the calculated background concentration. Subsequent use of a concentration as a final groundwater limitation will be subject to the discretion of the Executive Officer.

If the wastewater discharge is determined to have, or is likely to, impact groundwater and/or percolate quality based on the Groundwater Monitoring Summary Report or subsequent monitoring reports, then a Mitigation Plan shall be submitted within **90 days** of request by the Executive Officer. The plan shall address groundwater contaminants identified in the Groundwater Monitoring Summary Report, evaluate contaminant control alternatives, and select a preferred contaminant control alternative. The selected contaminant control alternative must comply with State Water Resources Control Board Resolution 68-16 and be consistent with the most recent Basin Plan. The Plan must include a project schedule for design and construction.

If the Mitigation Plan concludes that wastewater cannot be economically treated to a level that is protective of groundwater quality, then the wastewater will be classified as designated waste in accordance with California Water Code Section 13173 and management of the site will be transferred to the Regional Board's Title 27 program.

3. The Discharger shall comply with the Monitoring and Reporting Program No. R5-2002-0225, which is part of this Order, and any revisions thereto as ordered by the Executive Officer.

4. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which are attached hereto and by reference a part of this Order. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."

5. If the Discharger can demonstrate to the satisfaction of the Executive Officer that higher BOD loadings than that specified in Effluent Limitation No. C.3 will not cause or contribute to cause waste constituents to leach into and degrade underlying groundwater, or cause any other violation of the terms and conditions of this Order, then this Order may be reopened for consideration of revision of BOD loading limits. The demonstration shall include the submittal of a technical report that describes, at a minimum, the results of a field demonstration project conducted over the course of at least two years on similar soil types as those in the land treatment unit and using similar wastewater as that described in the Findings. Any proposed field demonstration project will be regulated under the terms and conditions of separate waste discharge requirements. As such, at least 120 days prior to conducting the field demonstration project, the Discharger (and/or other reasonable party) must submit a complete Report of Waste Discharge for the proposed field demonstration project.

6. If the Discharger can demonstrate to the satisfaction of the Executive Officer that higher nitrogen loadings than that specified in Effluent Limitation No. C.2 will not cause or contribute to cause waste constituents to leach into and degrade underlying groundwater, or cause any other violation of the terms and conditions of this Order, then this Order may be reopened for consideration of revision of nitrogen loading limits. The demonstration shall include the submittal of a technical report that describes, at a minimum, the results of a field demonstration project conducted over the course of at least two years on similar soil types as those in the land treatment unit and using similar wastewater as that described in the Findings. Any proposed field demonstration project will be regulated under the terms and conditions of separate waste discharge requirements. As such, at least 120 days prior to conducting the field demonstration project, the Discharger (and/or

other reasonable party) must submit a complete Report of Waste Discharge for the proposed field demonstration project.

7. In the event of any change in control or ownership of land or waste discharge facilities described herein, 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 this office.

8. The Discharger shall submit to the Regional Board on or before each compliance report due date the specified document, or if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is reported, then the Discharger shall state the reasons for noncompliance and shall provide a schedule to come into compliance.

9. The Discharger shall report promptly to the Regional Board any material change or proposed change in the character, location, or volume of the discharge.

10. The Discharger shall report to the Regional Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act of 1986."

11. The Discharger shall use the best practicable cost-effective control technique currently available to comply with salinity limits specified in this order.

12. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Violations may result in enforcement action, including Regional Board orders, the imposition of civil liability, revision or rescission of this Order, or referral to the Attorney General.

13. A copy of this Order shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.

14. The Regional Board will review this Order periodically and will revise requirements when necessary.

I, THOMAS R. PINKOS, Executive Officer, do hereby certify 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 December 2002.

THOMAS R. PINKOS, Executive Officer

TRO: 12/6/02

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2002-0225
FOR
ALPINE PACKING COMPANY, INC.
WASTEWATER TREATMENT FACILITY
SAN JOAQUIN COUNTY

This Monitoring and Reporting Program (MRP) describes requirements for monitoring industrial wastewater and groundwater. This MRP is issued pursuant to Water Code Section 13267. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer. Specific sample station locations shall be approved by Regional Board staff prior to implementation of sampling activities.

All samples should be representative of the volume and nature of the discharge or matrix of material sampled. The time, date, and location of each sample shall be recorded on the sample chain of custody form.

Field test instruments (such as those used to test pH and dissolved oxygen) may be used provided that:

1. The operator is trained in proper use and maintenance of the instruments;
2. The instruments are calibrated prior to each monitoring event;
3. Instruments are serviced and/or calibrated by the manufacturer, or manufacturer approved repair shop, at the recommended frequency; and
4. Field calibration reports are submitted as described in the "Reporting" section of this MRP.

INDUSTRIAL WASTEWATER INFLUENT MONITORING

Constituents	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Flow to Wastewater Ponds	gpd	Continuous	Daily	Monthly
Biochemical Oxygen Demand	mg/l	Grab[1]	Weekly	Monthly

[1] Use of a composite sampling device is acceptable upon approval by Regional Board staff.

INDUSTRIAL WASTEWATER POND EFFLUENT MONITORING

Wastewater effluent samples shall be collected prior to discharge to the land treatment unit. Effluent monitoring shall include, at a minimum, the following:

Constituents	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Flow to Land Treatment Unit	gpd	Continuous	Daily	Monthly
Sodium	mg/l	Grab[1]	Weekly	Monthly
Chloride	mg/l	Grab[1]	Weekly	Monthly
Total Dissolved Solids	mg/l	Grab[1]	Weekly	Monthly
Biochemical Oxygen Demand	mg/l	Grab[1]	Weekly	Monthly
Nitrate as Nitrogen	mg/l	Grab[1]	Monthly	Monthly

Constituents	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Total Kjeldahl Nitrogen	mg/l	Grab[1]	Monthly	Monthly
pH	S.U.	Grab[1]	Monthly	Monthly
Total Coliform Organisms	MPN/100 ml	Grab	Monthly	Monthly

[1] Use of a composite sampling device is acceptable upon approval by Regional Board staff.

WASTEWATER POND MONITORING

Samples shall be collected from all wastewater storage ponds and any wastewater/stormwater mixtures in the Stormwater Control Ditch. Samples shall be collected from an established sampling station as far as practical from the pond inlet, and in an area that will provide a sample representative of the wastewater in the pond. Samples for dissolved oxygen, and pH shall be collected at a depth of one foot below the pond surface. The Discharger shall notify staff within 24 hours if the freeboard in the ponds or stormwater control ditch is less than two feet. Pond monitoring shall include at least the following.

Constituents	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Freeboard	Feet	Measurement	Weekly	Monthly
Dissolved Oxygen	mg/l	Grab	Monthly	Monthly
pH	Std.	Grab	Monthly	Monthly
Pond Condition[1]	NA	Observation	Monthly	Monthly

[1] Pond condition monitoring shall include daily determination of berm condition, wastewater overflows, and odor conditions (none, slight, moderate, strong).

LAND TREATMENT UNIT MONITORING

Application of wastewater to the land treatment unit shall be monitored to prevent overloading the area with wastewater constituents, which can cause objectionable odors and/or groundwater degradation. The following parameters shall be calculated and reported in the monthly monitoring reports.

Constituents	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Application Area	Acres	Measured	Daily	Monthly
Runoff	Visual Inspection	Observation	Daily[3]	Monthly
Hydraulic Loading Rate	inches/acre•month	Calculated	Daily	Monthly
BOD_5 Loading Rate	lbs/acre•day	Calculated[1]	Weekly	Monthly
Total Nitrogen Loading Rate	lbs/acre•month	Calculated[2]	Monthly	Monthly
Cumulative Nitrogen Load	lbs/acre•year	Calculated	--	Monthly
Total Dissolved Solids	lbs/acre•year	Calculated	Monthly	Monthly

[1] BOD_5 loading shall be calculated using the daily applied volume of wastewater, estimated daily application area, and the most recent results of effluent BOD_5.

[2] Total nitrogen loading rates shall be calculated using the daily applied volume of wastewater, estimated daily application area, and the most recent results of total nitrogen.

[3] Runoff monitoring of the land treatment unit shall be performed when irrigation of the area occurs. Frequency of monitoring during the day shall be sufficient to determine if runoff is occurring.

In addition, the Discharger shall maintain a log of discharges to the land application area. Observations shall be noted and shall record which check is receiving wastewater, observations of ponding water, soil clogging, odors, insects, or other potential nuisance conditions. The notations shall also document any corrective actions taken. A copy of the notations recorded each month shall be submitted along with monthly monitoring reports.

LAND TREATMENT UNIT SOILS MONITORING

The Discharger shall establish, with concurrence of Board staff, four soil profile monitoring locations and one representative background location (i.e., in an area that historically has not received process wastewater) in the land treatment unit. The samples shall be collected and analyzed for at least the following constituents, and at the following frequency:

Constituents	Units	Soil Profile	Sampling and Reporting Frequency
Soil pH	pH	Standard[1]	Annually[2]
Volatile Solids	% Total Weight	Standard[1]	Annually[2]
Cation Exchange Capacity	meq/100 g	Standard[1]	Annually[2]
Nitrate (as N)	mg/kg	Standard[1]	Annually[2]
Total Kjeldahl Nitrogen	mg/kg	Standard[1]	Annually[2]

[1] Samples shall be collected at 0.5 feet, 3 feet, and 6 feet in depth.

[2] Samples shall be collected in September.

SOLIDS MONITORING

The Discharger shall record and report monthly the quantity, disposal location, and method of disposal of any solids produced at the facility.

GROUNDWATER MONITORING

Prior to completion and/or sampling of any groundwater monitoring wells, the Discharger shall submit plans and specifications to the Regional Board for review and approval. Once installed, all new wells shall be added to the MRP and shall be sampled and analyzed according to the schedule below.

Prior to sampling or purging, equilibrated groundwater elevations shall be measured to the nearest 0.01 foot. Depth to groundwater measurements shall be collected from all wells on the same day. The wells shall be purged at least three well volumes until pH and electrical conductivity have stabilized. Sample collection shall follow standard EPA analytical method protocols. Groundwater monitoring shall include, at a minimum, the following:

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Depth to Groundwater	0.01 ft	Measurement	Quarterly	Quarterly
Groundwater Elevation	0.01 ft	Calculated	Quarterly	Quarterly
Gradient	Ft/ft	Calculated	Quarterly	Quarterly
Gradient Direction	Degrees	Calculated	Quarterly	Quarterly
pH	S.U.	Grab	Quarterly	Quarterly
Electrical Conductivity	µmhos/cm	Grab	Quarterly	Quarterly
Total Dissolved Solids	mg/l	Grab	Quarterly	Quarterly
Sodium	mg/l	Grab	Quarterly	Quarterly
Chloride	mg/l	Grab	Quarterly	Quarterly
Nitrate as Nitrogen	mg/l	Grab	Quarterly	Quarterly
Total Kjeldahl Nitrogen	mg/l	Grab	Quarterly	Quarterly
Trihalomethanes[1]	µg/l	Grab	Annual[2]	Annual[2]

[1] Analysis for this parameter shall be performed using EPA Method 8010 or equivalent.
[2] Annual samples shall be collected in the first quarter (January-March) sampling event.

VADOSE ZONE MONITORING

Vadose zone monitoring shall be performed in accordance with the Vadose Zone Monitoring Workplan approved by Regional Board staff. Monitoring shall begin within 60 days of workplan approval.

REPORTING

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample type (e.g., effluent, groundwater, etc.), and reported analytical result for each sample are readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with waste discharge requirements and spatial or temporal trends, as applicable. The results of any monitoring done more frequently than required by the Monitoring and Reporting Program, including wastewater data collected for industrial wastewater discharge permits, shall be reported in the next scheduled monitoring report. All analytical data collected that is required by this MRP shall be analyzed by a California licensed laboratory.

As required by the California Business and Professions Code Sections 6735, 7835, and 7835.1, all groundwater monitoring reports shall be prepared under the direct supervision of a California Registered Engineer or Geologist and signed by the registered professional.

A. Monthly Monitoring Reports

Monthly reports shall be submitted to the Regional Board by the **1st day of the second month** following the end of the reporting period (i.e. the August monthly report is due by 1 October). Monthly reports for the months of March, June, September, and December may be submitted as part of the Quarterly Monitoring Report, if desired. The monthly reports shall include the following:

1. Results of industrial wastewater and industrial wastewater pond effluent, wastewater pond, land treatment unit, and solids disposal monitoring;
2. A comparison of monitoring data to the discharge specifications and an explanation of any violation of those requirements. Data shall be presented in tabular format;
3. If requested by staff, copies of laboratory analytical report(s);
4. A calibration log verifying calibration of all hand held monitoring instruments and devices used to comply with the prescribed monitoring program;
5. The total pounds of total dissolved solids (year to date) that have been applied to the land treatment unit, as calculated from the sum of the monthly loadings; and
6. The total pounds of nitrogen in fertilizer applied to the land treatment unit for the month.

B. Quarterly Report

The Discharger shall establish a quarterly sampling schedule for groundwater monitoring such that samples are obtained approximately every three months. Quarterly monitoring reports shall be submitted to the Board by the **1st day of the second month after the quarter** (i.e. the January-March quarter is due by May 1st) each year. The results of regular monthly monitoring reports for March, June, September, and December may be incorporated into their corresponding quarterly monitoring report. The Quarterly Report shall include the following:

1. Results of groundwater monitoring and vadose zone monitoring (when applicable);
2. A narrative description of all preparatory, monitoring, sampling, and analytical testing activities for the groundwater monitoring. The narrative shall be sufficiently detailed to verify compliance with the WDR, this MRP, and the Standard Provisions and Reporting Requirements. The narrative shall be supported by field logs for each well documenting depth to groundwater; parameters measured before, during, and after purging; method of purging; calculation of casing volume; and total volume of water purged;
3. Calculation of groundwater elevations, an assessment of groundwater flow direction and gradient on the date of measurement, comparison of previous flow direction and gradient data, and discussion of seasonal trends if any;
4. A narrative discussion of the analytical results for all groundwater locations monitored including spatial and temporal tends, with reference to summary data tables, graphs, and appended analytical reports (as applicable);
5. A comparison of monitoring data to the groundwater limitations and an explanation of any violation of those requirements;
6. Summary data tables of historical and current water table elevations and analytical results;
7. When applicable (i.e., for the second and fourth quarterly reports):
    a. A narrative description of all preparatory, monitoring, sampling, and analytical testing activities for vadose zone monitoring. The narrative shall be sufficiently detailed to verify compliance with the WDR, this MRP, and the Standard Provisions and Reporting

Requirements. Field logs documenting purging and sampling activities shall support the narrative.

b. A narrative discussion of the analytical results for all vadose zone monitoring locations, including spatial and temporal tends, with reference to summary data tables, graphs, and appended analytical reports (as applicable).

c. A comparison of monitoring data to applied effluent quality and the groundwater limitations.

d. Summary data tables of historical and current vadose zone analytical results.

8. A scaled map showing relevant structures and features of the facility, the locations of monitoring wells and any other sampling stations, and groundwater elevation contours referenced to mean sea level datum; and

9. Copies of laboratory analytical report(s) for groundwater and vadose zone monitoring.

C. Annual Report

Beginning with the year 2003, an Annual Report shall be prepared as the December monthly monitoring report. The Annual Report shall include all monitoring data required in the monthly and quarterly schedule. The Annual Report shall be submitted to the Regional Board by **1 February** each year. In addition to the data normally presented, the Annual Report shall include the following:

1. If requested by staff, tabular and graphical summaries of all data collected during the year;

2. The annual monitoring results for the wastewater monitoring and land treatment unit soils monitoring;

3. Tabular and graphical summaries of historical monthly total loading rates for water (hydraulic loading in gallons and inches), BOD, total nitrogen, and total dissolved solids.

4. A comprehensive evaluation of the effectiveness of the past year's wastewater application operation in terms of odor control, mosquito control, and groundwater protection, including consideration of application management practices (i.e.: waste constituent and hydraulic loadings, application cycles, drying times, and cropping practices), soil profile monitoring data and groundwater monitoring data;

5. A summary of the quantity of solid waste generated and disposed of both on and off the site;

6. An evaluation of the groundwater quality and soil pore liquid under the land application areas;

7. Estimated monthly flows for the next calendar year;

8. A discussion of compliance and corrective actions taken, as well as any planned or proposed actions needed to bring the discharge into full compliance with the waste discharge requirements; and

9. A discussion of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program;

A letter transmitting the self-monitoring reports shall accompany each report. Such a letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting noted violations, such as operation or facility modifications. If the discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain a statement by the discharger, or the discharger's authorized agent, under penalty of perjury, that to the best of the signer's knowledge the report is true, accurate and complete.

The Discharger shall implement the above monitoring program as of the date of this Order.

Ordered by:_____
THOMAS R. PINKOS, Executive Officer

6 December 2002
(Date)

TRO: 12/6/2002