

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION
ORDER R5-2006-0019-001
AMENDED WASTE DISCHARGE REQUIREMENTS
FOR
EL DORADO COUNTY
UNION MINE SEPTAGE/LEACHATE TREATMENT FACILITY
EL DORADO COUNTY

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

1. El Dorado County (hereafter Discharger) submitted a Report of Waste Discharge (RWD), dated 8 February 2005, for updating Waste Discharge Requirements (WDRs) for the Union Mine Septage/Leachate treatment facility (WWTF). Supplemental information was received on 28 June 2005, and 17 October 2005.
2. For the purposes of this Order, the term “wastewater treatment facility” (WWTF) shall mean the wastewater (i.e., Class II leachate and septage) treatment system, the effluent storage tanks, and the effluent disposal system.
3. WDRs Order No. 98-238, adopted by the Regional Board on 11 December 1998, prescribes requirements for the Union Mine Landfill (a partially closed unlined Class III landfill and an active Class II landfill), the landfill gas collection and flare system, the Class II leachate surface impoundment, and the Class II leachate and septage treatment and disposal facility. This Order is neither adequate nor consistent with the current plans and policies of the Regional Board.
4. Updated requirements for the Union Mine Landfill, landfill gas collection and flare system, and Class II surface impoundment are found in WDRs Order No. R5-2018-0048, adopted by the Regional Board on 31 May 2018. Requirements for the Class II leachate and septage treatment and disposal system are contained in this Order.
5. The Union Mine WWTF is owned and operated by El Dorado County and is located on Assessor’s Parcel Numbers 92-011-20 and 21. The facility is located approximately three miles south of the town of El Dorado, in Section 12, T9N, R10E, MDB&M, as shown on Attachment A, which is attached hereto and made part of this Order by reference.
6. The Union Mine WWTF receives Class II leachate generated from the Union Mine Landfill, condensate generated during extraction of landfill gas, septage and portable toilet waste generated throughout El Dorado County.
7. The WWTF consists of aerobic digesters, two sludge centrifuges, a disinfection system, two effluent storage tanks, and sprayfields. Attachment B, which is attached hereto and

made part of this Order by reference, depicts the treatment plant, storage tank, and disposal areas

8. According to information presented in the RWD, in 2004 the WWTF treated and disposed of approximately 554,200 gallons of Class II leachate and 5.6 million gallons of septage. In March 2005, the Discharger installed a flow meter to monitor the amount of condensate discharged into the Class II surface impoundment. Flow monitoring data since the flow meter was installed indicate that approximately 60 gallons per day (gpd), or 21,900 gallons annually of condensate are discharged into the Class II impoundment.
9. The Discharger accepts portable toilet waste. The Discharger estimates that approximately 180,000 to 200,000 gallons of portable toilet waste are delivered annually to the WWTF for treatment and disposal.
10. The WWTF does not have a single influent flow meter to monitor all flows entering the wastewater treatment system. The Discharger records septage flows entering the plant with two flow meters. The septage influent flow meters are located between the septage sump and each wastewater digester. Class II leachate flows are currently estimated by calculating the pumping rates (i.e., gallons per minute) and run times of the portable pumps used to convey leachate to the treatment plant. The Class II surface impoundment has an existing pump station, which has a flow meter to monitor flows conveyed to the treatment facility; however, the pump station is currently inoperable. In June 2005, the Discharger installed a flow meter between the effluent storage tank and the sprayfields to monitor the amount of wastewater being discharged to the sprayfields. To accurately measure leachate flows into the waste treatment system, this Order requires the Discharger to either install an influent flow meter, or repair the existing Class II surface impoundment pump station.
11. The treatment portion of the WWTF is designed to treat approximately 8 million gallons of waste annually, or approximately 22,000 gpd.
12. All off-site waste (i.e., septage and portable toilet waste) delivered to the WWTF is prescreened for solid and inert material (i.e., rags, rocks, grit, etc.) using automatic equipment or a manually racked bar screen.
13. After solids screening, off-site waste is discharged into one of two aerobic digesters via an automatically controlled wet well utilizing a lead and lag pump system. On-site generated liquid waste (i.e., Class II leachate, landfill gas condensate, and centrate from each centrifuge) is pumped directly into the aerobic digesters for treatment.
14. Each digester is a complete mix system that is kept in a homogenous state by an aeration diffuser system utilizing blowers. The aerobic process is continuous until a predetermined volatile solids reduction, other in-house testing parameter(s) are met, or liquids need to be

decanted due to digester capacity constraints. At this point, the digester aeration blower is shut down to allow the solids and liquid to separate. Supernatant from the digesters is decanted to the effluent storage tank using gravity or pumps depending on the wastewater level in the effluent storage tank.

15. Digested sludge from each aerobic digester is pumped to one of two centrifuges for solids processing. The processed solids from each centrifuge are deposited into temporary storage bins that are transported to the on-site Class II landfill for disposal or transported off-site to a permitted facility.
16. Effluent is stored in two two-million- gallon above ground storage tanks.
17. Disinfection is achieved by dosing the effluent stored in the effluent storage tanks or dosing as effluent is applied to the spray-fields through chlorine contact chambers with sodium hypochlorite or other approved disinfectant.
18. Septage, as referenced herein, is from domestic sources and is limited to (a) the solids pumped from septic tanks, and (b) wastes from portable toilets. The solids consist of a mixture of water, sewage solids, and microorganisms. Septage discharged by land spreading poses a potential threat of ground or surface water pollution and can create public nuisance conditions. For the purposes of this Order, septage does not include restaurant or grease trap wastes, car wash pumping, or other industrial wastes.

WATER BALANCES

19. As part of the RWD, the Discharger submitted a water balance for the average annual precipitation conditions which assumed that approximately 9,500 gpd (monthly average) of septage and portable toilet waste, and 3,100 gpd (monthly average) of Class II leachate and landfill gas condensate, would be treated and disposed of. The water balance indicates that the WWTF has sufficient treatment, storage, and disposal capacity for average annual precipitation conditions.
20. The water balance submitted for 100-year annual precipitation conditions indicates that the WWTF has sufficient treatment and storage capacity. The water balance for the 100-year scenario assumes that approximately 12,440 gpd (monthly average) of septage and portable toilet waste, and 7,560 gpd (monthly average) of Class II leachate and landfill gas condensate are treated and disposed of. Class II leachate generation is greater during 100-year conditions because of the uncapped areas in the landfill. The Discharger obtained a permit to discharge to the El Dorado Irrigation District (EID) Deer Creek Wastewater Treatment Plant (WWTP).
21. The RWD also included a third water balance which provided the flows at which the WWTF would have sufficient disposal capacity based on 100-year annual precipitation condition. The water balance shows that the wastewater disposal system has sufficient

capacity to dispose of approximately 2,600 gpd (monthly average) of septage and portable toilet waste, and 8,000 gpd (monthly average) of Class II leachate and landfill condensate, or approximately 10,600 gpd in total.

WASTEWATER CHARACTERISTICS

22. The RWD provided data on influent characteristics of the waste. Samples of wastewater influent (i.e., septage) and landfill gas condensate were collected on 15 March 2005, and Class II impoundment leachate was collected on 6 February 2005. Results of the sampling are presented below.

Parameter	Units	Septage	Condensate	Leachate
Cyanide	mg/L	<0.005	<0.005	NT
Sulfide	mg/L	<0.1	<0.1	NT
Total Organic Carbon	mg/L	72	2,200	35
Aluminum	mg/L	227	<0.25	<0.1
Arsenic	mg/L	<0.1	<0.1	<0.2
Barium	mg/L	5.38	<0.05	<0.1
Cadmium	mg/L	0.0255	<0.005	<0.01
Cobalt	mg/L	0.031	<0.005	<0.04
Total Chromium	mg/L	0.261	<0.001	<0.01
Copper	mg/L	8.55	<0.001	<0.01
Iron	mg/L	69.4	0.171	0.28
Mercury	mg/L	0.0165	<0.0005	<0.005
Manganese	mg/L	1.31	<0.001	0.52
Nickel	mg/L	0.295	<0.001	<0.04
Lead	mg/L	0.496	<0.05	<0.1
Silver	mg/L	0.0357	<0.01	<0.01
Thallium	mg/L	0.266	<0.1	<0.1
Vanadium	mg/L	0.25	<0.01	<0.04
Zinc	mg/L	15.8	<0.02	<0.01
Pesticides	ug/L	ND	ND	ND
Herbicides	ug/L	ND	ND	ND
Total VOCs	ug/L	ND	732.4	ND
Chlorobenzene	ug/L	ND	4.2	ND
2-Chlorotoluene	ug/L	ND	3.7	ND
1,4 Dichlorobenzene	ug/L	ND	39	ND
1,2-Dichloroethane	ug/L	ND	2.5	ND
Ethylbenzene	ug/L	ND	79	ND
Isopropyltoluene	ug/L	ND	5.8	ND
p-Isopropyltoluene	ug/L	ND	68	ND

Parameter	Units	Septage	Condensate	Leachate
Naphthalene	ug/L	ND	59	ND
n-Propylbenzene	ug/L	ND	5.2	ND
Styrene	ug/L	ND	14	ND
Toluene	ug/L	ND	160	ND
1,2,4-Trimethylbenzene	ug/L	ND	47	ND
1,3,5-Trimethylbenzene	ug/L	ND	15	ND
Xylenes	ug/L	ND	30	ND

Note: NT- Not tested; ND - None Detect

23. WDRs Order No. 98-238 required the Discharger to monitor leachate prior to discharge into the Class II leachate impoundment. The table below presents the results of leachate monitoring for March 2003 through August 2005:

Constituents	Units	Min/Max Concentration	Average Concentration
TDS	mg/L	320-560	400
Chloride	mg/L	52-110	75
Nitrate	mg/L	ND	ND
Sulfate	mg/L	2-21	11
Conductivity	umhos/cm	387-840	574
pH	Standard	6.3-9.5	7.3

24. WDRs Order No. 98-238 required the Discharger to monitor effluent quality prior to discharge the sprayfields. The table below presents the results of effluent monitoring for January through June 2005.

Constituents	Units	Min/Max Concentration	Average Concentration
TDS	mg/L	730-830	790
BOD	mg/L	1.9-14	6.0
Chloride	mg/L	140-190	167.5
Nitrate	mg/L	5.5	5.5
Sulfate	mg/L	230	230
Total Coliform Organisms	MPN/100mL	0->2,400	574
pH	Standard	6.3-7.0	6.7

25. Septage contains plant nutrients, (N, P, K, S, CA, Mg, Mn, B, Cu, Zn, Mo, Fe) and soil amendment characteristics that have potential agricultural benefits when applied at

appropriate rates. Some of the nutrients, including N, P, Cu, and Zn, can also negatively impact plant growth and/or water quality if over applied for extended periods.

26. Septage has the following characteristics which can create water quality and public health problems if improperly treated, managed, and regulated:
- Pathogens (disease causing organism) can be present. Unless the septage has been specially treated or disinfected to destroy pathogens, significant concentrations of bacteria, virus, and parasites can remain. Septage is treated via aerobic digestion and disinfection with sodium hypochlorite.
 - Heavy metals (Pb, Hg, Cd, Cr, and Ni) and toxic nonmetals (As, and Se) will be present. If these elements are over applied to a field, they can cause groundwater pollution, toxicity to plants, or buildup of metals in the plant tissues with transmission of the metals into the food chain. Cumulative application rates for these elements have been set to prevent such problems.
 - Odor and vector (insect and rodent) nuisances can result if septage has not been adequately treated prior to application, or if wet septage is allowed to stand in piles on the ground surface for several days.
 - Discharge of organic material, metals, and pathogens to surface waters can be prevented by control of field runoff, avoiding wet weather application, and treatment of septage for pathogens.

Wastewater Disposal System

27. Historically, the Discharger has disposed of effluent onto approximately 2.5 acres of sprayfields. However, in March 2005, the Discharger expanded the sprayfields to approximately 3.6 acres. The sprayfields are divided into two separate areas (i.e., upper and lower sprayfields). The upper sprayfield is approximately 2.2 acres, while the lower sprayfield is approximately 1.4 acres. Although the additional 1.1 acres of new sprayfields were constructed in 2004, wastewater had not yet been applied to the new sprayfield area, as it was not described in WDRs Order No.98-238.
28. The spray disposal system consists of two irrigation pumps, high density polyethylene (HDPE) piping from the filter building to the sprayfields, HDPE distribution piping at each sprayfield, and full impact sprinkler heads. Sprinkler heads are spaced approximately 30 feet apart. There are about 60 sprinkler heads in the upper sprayfield and about 40 in the lower sprayfield. Manually operated valves control flow to each sprayfield.
29. The RWD specifies that in order to (a) prevent any runoff or standing water on the sprayfields caused by effluent irrigation and (b) prevent potential groundwater degradation

due to percolation of effluent, irrigation should be conducted in such a manner that wastewater application rates do not exceed evapotranspiration (ET) rates for the type of crop grown on the sprayfields. Sprayfield ET rates (based on 100-year precipitation conditions) provided in the water balance are presented in the table below:

Month	Sprayfield ET (gpd)
January	3,330
February	4,066
March	8,653
April	12,865
May	13,757
June	19,940
July	26,615
August	25,678
September	15,929
October	9,555
November	4,535
December	3,144

30. The original sprayfields were seeded with a perennial pasture grass mix. The RWD included a Spray Irrigation Management Plan, which recommends that cereal rye be planted in the sprayfields. Planting of cereal rye is recommended because of its extensive root system, which may help limit deep leaching of nitrogen and other nutrients, and because it grows throughout the winter, thereby enhancing evapotranspiration. The Spray Irrigation Management Plan also recommends that the spray irrigation areas be mowed (including removal of cuttings) at least once per month during the late spring and early summer (April through August) to maintain the grass height at 4 inches or less to promote evaporation.
31. The RWD provides results of a salt balance conducted for the sprayfields. The results indicate that evaporation of applied effluent to the sprayfields could cause a buildup of salts in the surficial soil potentially causing highly soluble salts to redissolve into percolating rainwater during the winter, which could cause an increase in groundwater salinity. A salt balance using a simple mixing zone model suggests that sprayfield operation could potentially increase the TDS in groundwater by 30 to 100 mg/L. The RWD states that in order to prevent degradation of the groundwater from salts, it may be necessary to periodically remove salt laden surficial soils and replace them with new topsoil. The RWD recommends annual testing of the soils within the sprayfields to monitor the buildup of soluble salts and determine when to remove and replace topsoil. The RWD recommends that soils be removed and replaced with topsoil when the salinity in the upper six inches exceeds 4,000 umhos/cm. This Order requires the Discharger to conduct

annual monitoring to determine whether soils in the sprayfields need to be removed and replaced.

32. The RWD provides calculations for annual nitrate mass loading rates to the sprayfields. The calculations assume that approximately 4.5 million gallons of effluent will be irrigated on 3.6 acres of sprayfields, and the average concentration of nitrate as nitrogen will be 10 mg/L. Results of the calculation indicate that the nitrate as nitrogen loading will be approximately 105 lbs/arce/year, which is below crop uptake values.
33. Historically, the Discharger has disposed of some wastewater into the landfill gas flare unit. The RWD indicates that the Discharger does not propose to use the landfill gas flare unit as a means of disposal. However, this Order allows the disposal of wastewater into the gas flare unit, provided that the Discharger submit a report, showing that the discharge of wastewater into the gas flare unit will not impact the underlying groundwater or surface water. The discharge will be allowed upon approval of the report by the Executive Officer.

GROUNDWATER MONITAIRNG

34. Based on information presented in an April 2005 quarterly groundwater monitoring report, the depth to groundwater in wells located around the sprayfields ranges from approximately 50 to 67 feet below ground surface.
35. In 2004, the Discharger installed three groundwater monitoring wells (SF1, SF2, and SF3) downgradient of the sprayfields. The RWD provided results of quarterly groundwater sampling from December 2004 through May 2005. Results of groundwater sampling are presented below:

		SF1	SF1	SF2	SF2	SF3	SF3
Parameters	Units	Min/Max	Average	Min/Max	Average	Min/Max	Average
Calcium	mg/L	9.8-17.8	12.3	18-25.2	22.5	40-58	50.9
Magnesium	mg/L	20-29.1	24.4	7.5-9.9	8.9	24.9-35.6	31.9
Sodium	mg/L	12-17.5	14.1	7.6-12.9	11.4	20-23	21.8
Potassium	mg/L	<1-1.69	1.69	<1	<1	<1	<1
Alkalinity	mg/L	16-28	22.5	79-110	89.2	63-81	68.5
Chloride	mg/L	33-52	40	2-3.8	2.4	52-75	60.8
Sulfate	mg/L	66-120	96.2	30-37	33	140-210	174
TDS	mg/L	210-910	382	140-240	174	380-480	434
Nitrate	mg/L	<0.23	<0.23	<0.23-1.3	1.3	<0.23-2.6	2.6
Iron	mg/L	0.15-5.8	2.13	0.048-0.071	0.05	1.8-2.4	2.1

		SF1	SF1	SF2	SF2	SF3	SF3
Arsenic	mg/L	<0.05-0.052	0.052	<0.05-0.057	0.057	<0.05-0.063	0.063
Manganese	mg/L	0.83	0.83	0.34	0.34	4.9	4.9
Nickel	mg/L	<0.04	<0.04	<0.04	<0.04	0.066	0.066
Total VOCs	ug/L	ND-17	17	ND-5.9	5.9	ND	ND
pH	units	5.2-5.5	5.0	6.4-6.6	6.45	6.0-6.1	6.06
EC	umhos/cm	420	420	250	250	860	860

36. WDRs Order No. 98-238 required the Discharger to sample two lysimeters (one in the upper sprayfield and one in the lower sprayfield) within the spray disposal site. The table below presents the results of water sampled from each lysimeter.

Parameters: Lower Sprayfield Lysimeter (LS3)	Units	Min/Max Concentration	Average Concentration
BOD	mg/L	1.4 –6.6	3.2
pH	units	6.5-6.95	6.7
TSS	mg/L	<0.1-0.6	0.2
TDS	mg/L	660-750	706
Chloride	mg/L	150-170	160
Sulfate	mg/L	220	220
Sulfide	mg/L	<0.1	<0.1
EC	umhos/cm	982-1069	747
Upper Sprayfield Lysimeter (LS4)	Units	Min/Max Concentration	Average Concentration
BOD	mg/L	<1-6.6	2.6
pH	units	5.9-6.4	6.1
TSS	mg/L	<0.1-0.1	0.1
TDS	mg/L	500-620	550
Chloride	mg/L	31-40	35.5
Nitrate	mg/L	<1	<1
Sulfate	mg/L	35	35
Sulfide	mg/L	0.14	0.14
Alkalinity	mg/L	370	370
EC	umhos/cm	730-782	761

37. The RWD provides a groundwater quality evaluation based on five quarters of groundwater sampling data. Because the groundwater wells were installed downgradient of the disposal areas, groundwater monitoring data were compared to background

concentration limits established for the Landfill Waste Management Units (WMUs) 1 and 2. The RWD states that certain mineral parameters exceeded background concentration established for WMUs 1 and 2 and were most likely related to natural processes, with the possible exception of chloride. Comparison of groundwater data, applied irrigation rates, and lysimeter sampling data (lysimeters within the sprayfields), suggests sprayfield operations in 2003 and 2004 may have caused or contributed to elevated chloride concentrations in the unsaturated zone and shallow groundwater.

Site Specific Conditions

38. The average annual precipitation for the area is approximately 38.7 inches. The 100-year return rainfall is approximately 65 inches. Precipitation data are based on information collected from the Western Regional Climate Center for Placerville.
39. The average annual pan evaporation is approximately 67.9 inches.
40. The facility lies within the Weber Creek Hydrologic Unit Area No. 514.31, as depicted on interagency hydrologic maps prepared by the Department of Water Resources in August 1986.
41. According to information presented in the RWD, the soils and geology within the sprayfields are sandy loams approximately one to two feet thick. The sandy loam soils are underlain by friable rock fill.

Groundwater Degradation

42. State Water Resources Control Board (State Board) Resolution No. 68-16 (hereafter Resolution 68-16 or the "Antidegradation Policy") requires the Regional Board in regulating the discharge of waste to maintain high quality waters of the state until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the State Board and Regional Board policies (e.g., quality that exceeds water quality objectives).
43. The Regional Board finds that some degradation of groundwater beneath the wastewater sprayfields is consistent with Resolution 68-16 provided that:
 - a. The degradation is confined within a specified boundary;
 - b. The Discharger minimizes the degradation by fully implementing, regularly maintaining, and optimally operating best practicable treatment and control (BPTC) measures;
 - c. The degradation is limited to waste constituents typically encountered in municipal

wastewater as specified in the groundwater limitations in this Order; and

- d. The degradation does not result in water quality less than that prescribed in the Basin Plan.
44. Some degradation of groundwater by some of the typical waste constituents released with discharge from a municipal wastewater utility after effective source control, treatment, and control is consistent with maximum benefit to the people of California. The technology, energy, water recycling, and waste management advantages of municipal utility service far exceed any benefits derived from a community otherwise reliant on numerous concentrated individual wastewater systems, and the impact on water quality will be substantially less. Degradation of groundwater by constituents (e.g., toxic chemicals) other than those specified in the groundwater limitations in this Order, and by constituents that can be effectively removed by conventional treatment (e.g., total coliform bacteria) is prohibited. When allowed, the degree of degradation permitted depends upon many factors (i.e., background water quality, the waste constituent, the beneficial uses and most stringent water quality objective, source control measures, and waste constituent treatability).
 45. Economic prosperity of local communities and associated industry is of benefit to the people of California, and therefore sufficient reason exists to accommodate growth and some groundwater degradation around the WWTF, provided that the terms of the Basin Plan are met.

Treatment and Control Practices

46. This WWTF provides treatment and control of the discharge that incorporates:
 - a. Technology for secondary disinfected treatment of Class II leachate, septage, and portable toilet waste;
 - b. A Sprayfield Operation and Maintenance Plan; and
 - c. Certified operators to assure proper operation and maintenance.
47. The WWTF design and effluent disposal program incorporates minimal BPTC measures. In order to determine compliance with Resolution No. 68-16 it is appropriate to establish a schedule for installation and sampling of additional groundwater monitoring wells and to formally determine background groundwater concentrations for selected constituents. In addition, TDS loading rates on the disposal fields appear to be excessive. If groundwater is degraded or there is evidence that the discharge may cause degradation, then the Discharger will be required to evaluate and implement additional BPTC measures for each conveyance, treatment, storage, and disposal component of the system. Completion of these tasks will ensure that BPTC and the highest water quality consistent with the

maximum benefit to the people of the state will be achieved.

48. This Order establishes interim groundwater limitations for the WWTF that will not unreasonably threaten present and anticipated beneficial uses or result in groundwater quality that exceeds water quality objectives set forth in the Basin Plan. This Order contains tasks for assuring that BPTC and the highest water quality consistent with the maximum benefit to the people of the state will be achieved. Accordingly, the discharge is consistent with the antidegradation provisions of Resolution 68-16.

Basin Plan, Beneficial Uses and Regulatory Considerations

49. 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 Board. Pursuant to Section 13263(a) of the California Water Code, waste discharge requirements must implement the Basin Plan.
50. Surface water drainage from the WWTF is to Martinez Creek, a tributary to the North Fork of the Cosumnes River.
51. The beneficial uses of the Cosumnes River are municipal and domestic supply; agricultural supply; water contact recreation; non-contact water recreation; warm freshwater habitat; cold freshwater habitat; migration for aquatic organisms; spawning, reproduction, and/or early development; and wildlife habitat.
52. The beneficial uses of underlying groundwater are municipal and domestic water supply, agricultural supply, and industrial service and process supply.
53. The Basin Plan establishes numerical and narrative water quality objectives for surface water and groundwater within the basin, and recognizes that water quality objectives are achieved primarily through the Regional Board's adoption of waste discharge requirements and enforcement orders. Where numerical water quality objectives are listed, these are limits necessary for the reasonable protection of beneficial uses of the water. Where compliance with narrative water quality objectives is required, the Regional Board will, on a case-by-case basis, adopt numerical limitations in orders, which will implement the narrative objectives to protect beneficial uses of the waters of the state.
54. The Basin Plan water quality objective for chemical constituents requires that, at a minimum, waters designated as domestic or municipal supply must meet the maximum contaminant levels (MCLs) specified in the following provisions of Title 22, California Code of Regulations: Tables 64431-A (Inorganic Chemicals) and 64431-B (Fluoride) of Section 64431, Table 64444- A (Organic Chemicals) of Section 64444, and Tables 64449-A (Secondary Maximum Contaminant Levels-Consumer Acceptance Limits) and 64449-B

(Secondary Maximum Contaminant Levels-Rangers) of Section 64449. The Basin Plan's incorporation of these provisions by reference is prospective, and includes future changes to the incorporated provisions as the changes take effect. The Basin Plan recognizes that the Regional Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.

55. The Basin Plan contains narrative water quality objectives for chemical constituents, tastes and odors, and toxicity. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants animals, or aquatic life. The chemical constituent objective requires that groundwater shall not contain chemical constituents in concentrations that adversely affect beneficial uses. The tastes and odors objective requires that groundwater shall not contain tastes or odors producing substances in concentrations that cause nuisance or adversely affect beneficial uses.
56. Section 13241 of the Water Code requires the Regional Board to consider various factors, including economic considerations, when adopting water quality objectives into its Basin Plan. Water Code Section 13263 requires the Regional Board to address the factors in Section 13241 in adopting waste discharge requirements. The State Board, however, has held that a Regional Board need not specifically address the Section 13241 factors when implementing existing water quality objectives in waste discharge requirements because the factors were already considered in adopting water quality objectives. These waste discharge requirements implement adopted water quality objectives. Therefore, no additional analysis of Section 13241 factors is required.
57. The United States Environmental Protection Agency (EPA) has promulgated biosolids reuse regulations in 40 CFR 503, Standard for the Use or Disposal of Sewage Sludge, which establishes management criteria for protection of ground and surface waters, sets application rates for heavy metals, and establishes stabilization and disinfection criteria.
58. The Regional Board is using the Standards in 40 CFR 503 as guidelines in establishing this Order, but the Regional Board is not the implementing agency for 40 CFR 503 regulations. The Discharger may have separate and/or additional compliance, reporting, and permitting responsibilities to the EPA.
59. Federal regulations for stormwater discharges promulgated by the EPA (40 CFR Parts 122, 123, and 124) require specific categories of facilities which discharge stormwater to obtain NPDES permits. This facility is within the specific categories described by the US EPA, and it is therefore appropriate to require that the Discharger submit a Notice of Non-Applicability, apply for a No Exposure Certification, or obtain coverage for its processing facility under the State Board's Water Quality Order No. 97-03-DWQ to comply with these regulations.

60. On 10 May 1994 the El Dorado County Board of Supervisors certified an April 1994 addendum to the January 1992 Final Environmental Impact Report for the landfill facility (including the WWTF) in accordance with the California Environmental Quality Act (CEQA Public Resources Code Section 21000, et seq) and the State Guidelines. In addition, the El Dorado County Board of Supervisors adopted a Negative Declaration for the additional sprayfields, acceptance of portable toilet waste, and construction of an additional two million gallon storage tank at the WWTF on 16 December 2005, in accordance with the CEQA and the State Guidelines.
61. The action to update WDRs for this existing facility is exempt from the provisions of the CEQA, in accordance Title 14, California Code of Regulations (CCR), Section 15301.
62. Section 13267(b) of the California Water Code 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 discharging, or who proposes to discharge within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of discharging, or who proposes to discharge waste outside of its region that could affect the quality of the waters of the state within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports 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."
63. The technical reports required by this Order and the attached "Monitoring and Reporting Program No. R5-2006-0019" are necessary to assure compliance with these waste discharge requirements. The Discharger owns and operates the facility that discharges the wastes subject to this Order.
64. The California Department of Water Resources sets standards for the construction and destruction of groundwater wells, 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 Section 13801, apply to all monitoring wells.
65. State regulations that prescribe procedures for detecting and characterizing the impact of waste constituents from waste management units on groundwater are found in Title 27. While the WWTF is exempt from Title 27, the data analysis methods of Title 27 may be appropriate for determining whether the discharge complies with the terms for protection of groundwater specified in this Order.
66. The discharge authorized herein and the treatment and storage facilities associated with

the discharge, except for discharges of residual sludge and solid waste, are exempt from the requirements of Title 27, California Code of Regulations (CCR), Section 20005 et seq. (hereafter Title 27). The exemption, pursuant to Title 27 CCR Section 20090(a), is based on the following:

- a. The waste consists primarily of domestic sewage and treated effluent;
- b. The waste discharge requirements are consistent with water quality objectives; and
- c. The treatment and storage facilities described herein are associated with a municipal wastewater treatment plant.

67. Pursuant to California Water Code Section 13263(g), discharge is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.

Salt and Nitrate Control Programs Reopener

68. The Central Valley Water Board adopted Basin Plan amendments incorporating new programs for addressing ongoing salt and nitrate accumulation in the Central Valley at its 31 May 2018 Board Meeting. The Basin Plan Amendments were conditionally approved by the State Water Board on 16 October 2019 and the Office of Administrative Law on 15 January 2020.

- a. For nitrate, dischargers that are unable to comply with stringent nitrate requirements will be required to take on alternate compliance approaches that involve providing replacement drinking water to persons whose drinking water is affected by nitrates. Dischargers could comply with the new nitrate program either individually or collectively with other dischargers. For the Nitrate Control Program, the Facility falls within Groundwater Non-Prioritized Basins. Notices to Comply for Non-Prioritized Basins will be issued within two to four years after the effective date of the Nitrate Control Program.
- b. For salinity, dischargers that are unable to comply with stringent salinity requirements would instead need to meet performance-based requirements and participate in a basin-wide effort to develop a long-term salinity strategy for the Central Valley. Dischargers will receive a Notice to Comply with instructions and obligations for the Salt Control Program within one year of the effective date of the amendments (17 January 2020). Upon receipt of the Notice to Comply, the Discharger will have no more than six months to inform the Central Valley Water Board of their choice between Option 1 (Conservative Option for Salt Permitting) or Option 2 (Alternative Option for Salt Permitting).

As these strategies are implemented, the Central Valley Water Board may find it necessary to modify the requirements of these WDRs to ensure the goals of the Salt and

Nitrate Control Programs are met. This order may be amended or modified to incorporate newly applicable requirements.

69. This Order may be amended or modified to incorporate any newly applicable requirements.

Public Notice

70. All of the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, were considered in establishing the following conditions of discharge.
71. The Discharger and interested agencies and persons have been notified of the intent to prescribe waste discharge requirements for this discharge, and they have been provided an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
72. In a public meeting, all comments pertaining to the discharge were heard and considered.

IT IS HEREBY ORDERED that Order R5-2006-0019 is amended and, pursuant to Sections 13263 and 13267 of the California Water Code, the County of El Dorado, its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted hereunder, shall comply with the following:

[Note: Other prohibitions, conditions, definitions, and some methods 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 to surface waters or surface water drainage courses is prohibited.
2. Bypass or overflow of untreated or partially treated waste is prohibited.
3. Discharge of treated wastewater downstream of the WWTF, other than at the approved sprayfields or discharged to the Deer Creek WWTP, is prohibited.
4. The acceptance and discharge of restaurant and grease trap waste, car wash pumping, and other commercial or industrial wastes is prohibited.
5. Discharge of waste classified as 'hazardous', as defined in Sections 2521(a) of Title 23, CCR, Section 2510, et seq., (hereafter Chapter 15), or 'designated' as defined in Section 13173 of the California Water Code, is prohibited.

6. Public contact with reclaimed water is prohibited.
7. Surfacing of wastewater outside or downgradient of the Class II leachate surface impoundment is prohibited.
8. Surfacing of wastewater within or downgradient of the sprayfield is prohibited.

B. Discharge Specifications:

1. The monthly average inflow to the WWTF shall not exceed 20,000 gpd. However, the Discharger may submit a request to the Executive Officer, and upon approval, the Executive Officer may authorize increasing the influent flow limit up to the disposal capacity of 22,000 gpd.
2. The monthly average discharge of treated effluent to the sprayfields shall not exceed the following:

Month	Discharge to Sprayfields (gpd)
January	3,300
February	4,000
March	8,600
April	12,900
May	13,800
June	20,000
July	26,700
August	25,700
September	16,000
October	9,600
November	4,500
December	3,100

3. Disposal of effluent shall be confined to the sprayfields or the Deer Creek WWTP, as defined in this Order. The Discharger may dispose of wastewater into the landfill gas flare unit.
4. 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 Limitations.
5. Neither the treatment nor the discharge shall cause a condition of pollution or nuisance

as defined by the California Water Code, Section 13050.

6. Objectionable odor originating at the facility shall not be perceivable beyond the limits of the wastewater treatment and disposal areas.
7. As a means of discerning compliance with Discharge Specification No. 6, the dissolved oxygen content in the upper zone (one foot) of the effluent storage tank(s) shall not be less than 1.0 mg/L.
8. Public contact with wastewater shall be precluded or controlled through such means as fences and signs, or acceptable alternatives.
9. The Discharger shall operate all systems and equipment to maximize treatment of wastewater and optimize the quality of the discharge.
10. The wastewater treatment, storage, and disposal system shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
11. The WWTF shall have sufficient treatment, storage, and disposal capacity to accommodate allowable wastewater flow, design seasonal precipitation, and ancillary infiltration and inflow during the winter months. 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.
12. The freeboard in the effluent storage tanks shall never be less than two feet as measured vertically from the water surface to the lowest point of overflow.
13. By **1 November** each year, available storage tank capacity shall at least equal the volume necessary to comply with Discharge Specifications No. 11 and No. 12.
14. The Discharger's highest priority shall be to treat and dispose of liquid wastes contained in the Class II surface impoundment. The Class II surface impoundment shall be emptied by **1 November** of each year.
15. The Discharger shall implement the items described in Spray Irrigation Management Plan submitted as part of the RWD.
16. The effluent storage tanks shall be managed to prevent the breeding of mosquitoes. In particular,
 - a. Weeds shall be minimized through control of water depth, harvesting, and/or herbicides.

- b. Dead algae, vegetation, and debris shall not accumulate on the water surface.

C. Effluent Limitations

1. Effluent discharged to the spray disposal area shall not exceed the following limits:

Constituent	Units	Monthly Average	Daily Maximum
BOD	mg/L	40	80
Total Settleable Solids	mg/L	0.5	1.0
Ammonia as Nitrogen	mg/L	1.5	-
Zinc	mg/L	2.0	-
Formaldehyde	ug/L	20	-
Phenols	ug/L	2,100	-
Total VOCs	ug/L	Non detect	-
Total Coliform Organisms	MPN/100m	232	240

Note: BOD denotes 5-day biochemical oxygen demand at 20 Celsius degree.
 Total Coliform Organisms measured as a monthly median.
 Total VOCs for non-detect limit ranges from less than 0.5 to 1.0 ug/L.

2. Effluent discharged to the sprayfields shall not have a pH of less than 6.5 or greater than 8.4.

D. Sprayfield Specifications

- Public contact with wastewater shall be controlled through use of fences and cautionary signs, and/or other appropriate means.
- Application of effluent shall comply with the following setback requirements:

Setback Definition	Minimum Irrigation Setback (feet)
Edge of sprayfields to property boundary	50
Edge of sprayfields to public road	50
Edge of sprayfields to irrigation well	100
Edge of sprayfields to domestic well	100

Setback Definition	Minimum Irrigation Setback (feet)
Edge of sprayfields to manmade or natural surface water drainage course: excluding ditches used exclusively for tailwater return	50

Note: Setback is defined by the wetted area produced during irrigation.

3. Irrigation runoff (i.e., tailwater) shall be completely contained within the designated sprayfields and shall not enter any surface water drainage course.
4. Irrigation of effluent shall not be performed within 24 hours of a forecasted storm, during a storm, within 24 hours after any measurable precipitation event, or when the ground is saturated.
5. Spray irrigation of effluent is prohibited when wind velocities exceed 30 mph.
6. Mowing and removing grass within the sprayfields shall be conducted during the summer (i.e., May through August) when the grass height exceeds four inches.
7. Soils within the sprayfields shall be removed and replaced with new soils when the upper six inches has an EC value greater than 4,000 umhos/cm, as determined by the soil monitoring requirements in Monitoring and Reporting Program R5-2006-0019. The removal and replacement shall take place within six months of receipt of the laboratory data. Once the soil is removed, wastewater shall not be applied until the new soil is placed and a crop planted.
8. The sprayfields shall be managed to prevent breeding of mosquitoes. In particular:
 - a. There shall be no standing water 48 hours after irrigation ceases;
 - b. Tailwater ditches must be maintained essentially free of emergent, marginal, and floating vegetation, and
 - c. Low-pressure and unpressurized pipelines and ditches accessible to mosquitoes shall not be used to store effluent.
9. Application rates of wastewater water shall not exceed agronomic rates considering the crop, soil, climate, and irrigation management system.

E. General Solids Disposal Specifications:

Sludge, as used in this document, means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater treatment processes. Solid waste refers to grit and screenings generated during preliminary treatment. Residual sludge means sludge that will not be subject to further treatment at the WWTF. Biosolids refers to sludge that has been treated and tested and shown to be capable of being beneficially and legally used pursuant to federal and state regulations as a soil amendment for agriculture, silviculture, horticulture, and land reclamation activities.

1. Sludge and solid waste shall be removed from screens, sumps, and tanks as needed to ensure optimal plant operation.
2. Treatment and storage of sludge generated by the WWTF shall be confined to the WWTF property, and shall be conducted in a manner that precludes infiltration of waste constituents into soils in a mass or at concentrations that will violate the Groundwater Limitations of this Order.
3. Any storage of residual sludge, solid waste, and biosolids at the WWTF shall be temporary, and the waste shall be controlled and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or at concentrations that will violate the Groundwater Limitations of this Order.
4. Residual sludge, biosolids, and solid waste shall be disposed of in a manner allowed by WDRs Order R5-2018-0048 for the Union Mine Landfill or transported off-site to a permitted facility.

F. Groundwater Limitations:

1. Release of waste constituents from any wastewater treatment, storage, or disposal system component associated with the WWTF shall not cause groundwater under and beyond that system component, as determined by an approved well monitoring network, to:
 - a. Contain any of the following constituents in concentration greater than as listed or greater than ambient background quality, whichever is greater:

Constituent	Units	Limitation
Ammonia (as NH4)	mg/L	1.5
Boron	mg/L	0.7
Chloride	mg/L	106
Iron	mg/L	0.3

Constituent	Units	Limitation
Manganese	mg/L	0.05
Sodium	mg/L	69
Total Coliform Organisms	MPN/100 mL	<2.2
Total Dissolved Solids	mg/L	450
Total Nitrogen	mg/L	10
Nitrite (as N)	mg/L	1
Nitrate (as N)	mg/L	10
Zinc	mg/L	2.0
Bromoform	µg/L	4
Bromodichloromethane	µg/L	0.27
Chloroform	µg/L	1.1
Dibromochloromethane	µg/L	0.37
Formaldehyde	µg/L	2.0
Phenols	µg/L	2,100

Note: Total Dissolved Solids limit is a cumulative impact limit that accounts for several dissolved constituents in addition to those listed here separately [e.g., alkalinity (carbonate and bicarbonate), calcium, hardness, phosphate, and potassium]; Total Nitrogen is measured as sum of nitrate, nitrite, and total kjeldahl nitrogen.

- b. Exhibit a pH of less than 6.5 or greater than 8.4 pH units, or be lower than ambient background groundwater quality.
- c. Impart taste, odor, or color that creates nuisance or could impair any beneficial use.

G. Provisions

1. The following reports shall be submitted pursuant to Section 13267 of the California Water Code and shall be prepared as described by Provision G.3.
 - a. At least **90 days** prior to any sludge removal or disposal from the storage tanks, the Discharger shall submit a Sludge Cleanout Plan. The plan shall include a detailed program and schedule for periodic tank cleanout and disposal of sludge, provide a description on how sludge will be dewatered, stored and handled on-site, and provide a description of where the sludge will be disposed of.
 - b. The Discharger shall comply with the Basin Plan amendments adopted in Resolution R5-2018-0034 incorporating new programs (Salt and Nitrate Control Programs) for addressing ongoing salt and nitrate accumulation in the Central Valley developed as part of the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) initiative.

2. If groundwater monitoring results show that the discharge of waste is causing groundwater to contain waste constituents in concentrations statistically greater than background water quality then, within **120 days** of the request of the Executive Officer, the Discharger shall submit a *BPTC Evaluation Workplan* that sets forth the scope and schedule for a systematic and comprehensive technical evaluation of each component of the facility's waste treatment and disposal system to determine best practicable treatment and control for each waste constituent listed in the Groundwater Limitation F.1.a. of this Order. The workplan shall contain a preliminary evaluation of each component of the WWTF and effluent disposal system and propose a time schedule for completing the comprehensive technical evaluation. The schedule to complete the evaluation shall be as short as practicable, and shall not exceed one year.
3. In accordance with California Business and Professions Code Sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain workplans for investigations and studies, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Discharger shall include the professional's signature and/or stamp of the seal.
4. The Discharger shall comply with Monitoring and Reporting Program R5-2006-0019, which is part of this Order, and any revisions thereto as ordered by the Executive Officer.
5. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which are attached hereto and made part of this Order by reference. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."
6. The Discharger shall use the best practicable cost-effective control technique(s) including proper operation and maintenance, to comply with discharge limits specified in this order.
7. The Discharger shall provide certified wastewater treatment plant operators in accordance with Title 23 of the California Code of Regulations, Division 3, Chapter 26
8. As described in the Standard Provisions, the Discharger shall report promptly to the Regional Board any material change or proposed change in the character, location, or volume of the discharge.
9. 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."

10. 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 being reported, then the Discharge shall state the reasons for such noncompliance and provide an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Board in writing when it returns to compliance with the time schedule.
11. In the event of any change in control or ownership of the WWTF, the Discharger must 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. To assume operation as Discharger under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Regional Board, and a statement. The statement shall comply with the signatory paragraph of Standard Provision B.3 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer shall be approved or disapproved by the Executive Officer.
12. The Discharger must comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed herein or by the Executive Officer pursuant to Section 13267 of the CWC. Violations may result in enforcement action, including Regional Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.
13. A copy of this Order shall be kept at the operations facility for the wastewater treatment facility. Key operating personnel shall be familiar with its contents.
14. The Regional Board will review this Order periodically and will revise requirements when necessary.

WASTE DISCHARGE EQUIREMENTS ORDER R5-2006-0019-001
EL DORADO COUNTY
UNION MINE SEPTAGE/LEACHATE TREATMENT FACILITY
EL DORADO COUNTY

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I, PATRICK PULUPA, 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 18 February 2021.

PATRICK PULUPA, Executive Officer