

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2010-_____

WASTE DISCHARGE REQUIREMENTS
FOR
THUNDERBOLT WOOD TREATING COMPANY, INC.
LOVALVO LEONARD & GRACE TRUST, LOVALVO FAMILY 2005 TRUST
CLASS II SURFACE IMPOUNDMENT
STANISLAUS COUNTY

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

1. Thunderbolt Wood Treating Company, Inc. (facility owner and operator) and Lovalvo Leonard & Grace Trust, Lovalvo Family 2005 Trust (landowner), hereafter referred to jointly as Discharger, submitted a 31 August 2010 Report of Waste Discharge (ROWD) for revision of waste discharge requirements (WDRs) for the Thunderbolt Wood Treating facility in Stanislaus County. The ROWD was submitted pursuant to a 15 June 2010 request by the Executive Officer for a ROWD meeting the requirements of Title 27, California Code of Regulations (CCR) Section 20005, et seq. (Title 27).
2. The facility is on 17-acre Assessor's Parcel Number 132-039-021 at 3400 Patterson Road in Riverbank, Stanislaus County (Section 25, T2S, R9E MDB&M), as shown on Attachment A, which is attached hereto and made part of the Order by reference.
3. The wood treating facility began operating in 1978. The Discharger chemically treats wood to produce lumber and other wood products that are resistant to insects and microbial deterioration. All wood is treated using water-based chemical solutions in pressurized vessels, and five separate chemical processes are used: chromated copper arsenate (CCA), ammonical copper zinc arsenate (ACZA), disodium octaborate tetrahydrate (DOT), alkaline copper quat (ACQ), and phospho ammonium boron (D-Blaze).
4. The facility is comprised of an office building, chemical process areas, paved wood storage areas, unpaved areas used only for storage of untreated wood, storm water catch basins and sumps, storage tanks, and a lined surface impoundment used to store contaminated storm water prior to treatment and discharge to the sanitary sewer. The site plan is depicted on Attachment B, which is attached hereto and made part of the Order by reference. Constituents of concern for the surface impoundment are pH, electrical conductivity, total nitrogen, ammonia as nitrogen, arsenic, total chromium, hexavalent chromium, and copper.
5. Previous WDRs Order No. R5-2002-0036, adopted by the Central Valley Water Board on 1 March 2002, prescribed requirements for capturing and storing storm water that has contacted active industrial processing areas, wastes, and finished

products for discharge to the lined surface impoundment under the “Non15” program. The Discharger has made several improvements to reduce the volume of water and the concentration of contaminants that enter the surface impoundment; however, this revised Order requires that the discharge be regulated in accordance with Title 27 due to concentrations of arsenic and chromium in the water that continue to indicate it is a designated waste.

6. This Order primarily regulates the surface impoundment, but also includes some requirements for a paved and curbed wood storage area for CCA and ACZA treated wood. The surface impoundment was lined in 1984, with certification of construction being completed on 24 August 1984, and also operated as an unlined surface impoundment prior to being lined. WDRs were first adopted by the Central Valley Water Board for this site in 1980. Since it operated and was permitted prior to 27 November 1984, it is therefore an “existing” unit as defined in Section 20080(d) of Title 27.

WASTE AND WASTE MANAGEMENT UNIT CLASSIFICATION

7. The State Water Resources Control Board (State Water Board) promulgated regulations under Title 27 consisting of requirements, waste classifications, and waste management unit classifications designed to protect the beneficial uses of waters of the state for projects involving the discharge of designated waste to land for treatment, storage, or disposal.
8. California Water Code (CWC) §13173(b) defines “designated waste” to include “[n]on hazardous waste that consists of, or contains, pollutants that, under ambient environmental conditions at a waste management unit, could be released in concentrations that exceed applicable water quality objectives or that could reasonably be expected to affect beneficial uses of waters of the state as contained in the appropriate state water quality control plan.”
9. The Discharger provided data in the ROWD for samples collected from the surface impoundment since 2007, which are shown in the table below. The table also includes the California Primary Maximum Contaminant Level (Primary MCL), the lowest applicable water quality goal (WQG) for groundwater for protection of drinking water beneficial use for domestic and municipal supply wells, and the proposed concentration limits derived from data at the background monitoring well. Concentrations are in micrograms per liter (ug/L).

Date	Dissolved Arsenic (ug/L)	Dissolved Total Chromium (ug/L)	Dissolved Hexavalent Chromium (ug/L)	Dissolved Copper (ug/L)
2/23/2007	1,200	440	180	1,000
6/11/2007	5,400	3,400	2,800	550
8/28/2007	47	4.7	<0.5	122

Date	Dissolved Arsenic (ug/L)	Dissolved Total Chromium (ug/L)	Dissolved Hexavalent Chromium (ug/L)	Dissolved Copper (ug/L)
11/29/2007	298	17	<0.01	63
2/29/2008	330	140	4	670
5/29/2008	134	27	9.4	176
8/25/2008	20	23	7	796
11/25/2008	98	35	34.1	373
3/4/2009	987	710	708	509
5/28/2009	1,370	259	206	236
11/30/2009	720	190	1.2	966
2/4/2010	450	42	1.9	912
5/3/2010	316	9.7	<0.5	446
Primary MCL	10	50	50 (based on total chromium)	1,300
Lowest Applicable WQG	0.004 (CA public health goal)	50	50 (draft CA public health goal is 0.06)	300 (CA public health goal)
Proposed Concentration Limit ¹	3.01	20.68	5.61	7.10

¹ The proposed concentration limits in the ROWD are based on the 95% upper confidence limit from the background groundwater data at monitoring well MW-12 (as of 2010) at the southeast corner of the site.

10. Concentrations of arsenic and chromium in the water samples from the surface impoundment generally exceed both the primary MCLs and the California Public Health Goals (PHG). The PHG of 0.004 ug/L for arsenic is based on cancer risk. There is no final public health goal for chromium yet; however, the Office of Environmental Health Hazard Assessment has developed a draft PHG for hexavalent chromium of 0.06 ug/L based on cancer risk. In any case, the arsenic concentrations greatly exceed the primary MCL, the PHG, and background groundwater quality. For instance, the most recent sample for arsenic with a concentration of 316 ug/L exceeds the primary MCL by a factor of 31.6, the PHG by a factor of 79,000, and the proposed concentration limit from the background data by at factor of 105. Also, the sample collected on 11 June 2007 with an arsenic concentration of 5,400 ug/L exceeds both federal and California hazardous levels of 5.0 milligrams per liter for leachate from solid waste. Furthermore, the ROWD states that assuming a constant head of 2 million gallons in the impoundment, a permeability analysis showed that it would take 210.2 days for the water to reach a sandy layer beneath the natural clay layer and potentially migrate to groundwater. There is already existing groundwater contamination in the monitoring wells downgradient from the impoundment and the ROWD states that it has been hypothesized that the contamination results from the eight years of

operations in which the impoundment was not lined and sections of the facility were unpaved, however this hypothesis has not yet been confirmed. If surface impoundment was unlined, the water contained in it would be released in concentrations exceeding the applicable water quality objectives and could reasonably be expected to affect the drinking water beneficial uses of the underlying groundwater. Therefore, the water in the surface impoundment is a designated waste as defined in the CWC, and is subject to regulation under Title 27.

11. The surface impoundment is a waste management unit (WMU) that has previously been regulated under "Non15" WDRs, and was not classified under Title 27. The impoundment is equipped with a double liner system and leachate collection and removal system (LCRS) that meets the prescriptive requirements and performance standards of Title 27 (more details are included in later Findings of this Order). This Order classifies the WMU as a Class II surface impoundment under Title 27 and the impoundment meets the applicable Title 27 construction requirements for a Class II surface impoundment.

SITE DESCRIPTION

12. Surrounding land use within one mile of the facility is a mix of industrial, commercial, and residential. The City of Riverbank is to the north of the facility. Areas west of the facility are predominantly industrial and commercial facilities. The facility is bordered to the south by residential housing and to the east by a mobile home park. There are two domestic wells and one municipal supply well located approximately 500 feet to the south. Another municipal supply well is located approximately 1,300 feet east by northeast of the facility. Groundwater gradient is generally to the west or northwest away from these wells.
13. The average annual precipitation at the facility is 12.21 inches based on the nearest weather station in Modesto. The 100-year wet season was calculated to be 25.6 inches based on the Western Regional Climate Center's period of record tables for Modesto. The 1,000-year 24-hour storm event is 3.54 inches using the Department of Water Resources Rainfall Depth Duration Frequency data for Modesto.
14. Geologic cross sections constructed from logs of the monitoring wells and other borings reveal that the site is underlain by fluvial sediments that are dominated by sand with lenses of clay and silt to a depth of approximately 80 feet. At 80 feet there is a gravel unit that ranges from 10 to 15 feet thick. Below the gravel the sediments consist of silt/clay layers and sand. The bottom of the surface impoundment is completed in a clay/silt layer that ranges from three to five feet thick.

15. The surface impoundment is constructed to a depth of approximately 17 feet below grade, and the first groundwater is approximately 65 to 70 feet below the bottom of the surface impoundment.
16. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basin, Fourth Edition* (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin. Pursuant to Section 13263(a) of the CWC, waste discharge requirements must implement the Basin Plan.
17. The designated beneficial uses of the underlying groundwater, as specified in the Basin Plan, are municipal and domestic water supply, agricultural supply, industrial service supply, and industrial process supply.
18. The Discharger has reported that there are no surface water discharges from the site. All storm water runoff is captured in catch basins with sumps and pumped either to tanks for reuse in the wood treating process or routed to the surface impoundment.
19. The ROWD states that a search of the California Geological Survey for Ground Motions at this site indicates a 1.0-second motion which creates an acceleration of 0.272 g in the alluvium material.

INDUSTRIAL PROCESS AND OPERATIONS

20. The processing area includes several discrete material storage areas where chemicals used in the process are stored and treating solutions are formulated. Secondary containment is provided for many of the liquid storage tanks and all storage areas drain to the process sumps. Storm water runoff drains either to process sumps (such as the drip pad area for the CCA wood treatment area), or to catch basins with sumps and pumps that route the water to above ground plastic tanks. Water in sumps that collect storm water runoff in areas outside of the processing and treated wood storage areas is routed to the surface impoundment. All areas are paved except for areas where untreated wood is stored. The southern area of the site is unpaved and is significantly higher than the rest of the site. No processing or treated wood storage is conducted in this area that drains to an unlined pond at the south end of the site.
21. A total of 12,000 gallons of water per day are used in the wood treating process during days the facility is operating. When available, the Discharger uses water from the various above ground tanks that store contaminated runoff, and uses water from the Class II surface impoundment. This is done to maintain capacity for storm events and to reuse valuable chemicals in this water that would otherwise be lost.

22. CCA and ACZA treated wood are stored within the CCA/ACZA diversionary structure and storm water runoff is captured and pumped into above ground plastic tanks for reuse as chemical process water. The CCA/ACZA diversionary structure (or storage area) is approximately 130 feet by 277 feet and is surrounded by a concrete curb that is 12 to 18 inches high. The concrete curb was keyed in and sealed, and the joint between the curb and asphaltic concrete is sealed using an asphaltic sealer to eliminate water leakage. A pump is located at the low southwest corner to route water to the tanks. The Discharger has proposed to install a sump at this location to prevent water from ponding in the diversionary structure before the water is high enough to activate the pump, and this Order requires the installation of the sump.
23. Prior to processing, the untreated wood is incised to enhance solution penetration and is then loaded onto tram cars. The tram cars are loaded into a metal pressure vessel (retort), which is closed and sealed. The treating solution is introduced to the retort and the pressure is increased. After the required treatment time, the residual treating solution is returned to the work tank for recycling. A vacuum is then applied to the retort to remove excess treating solution from the wood.
24. For the ACZA process, the treated wood is removed from the retort and placed to dry on a roofed concrete drip pad that drains to the process sump. Treated wood from the CCA processes is removed and placed on an uncovered drip pad that drains to the process sump. Once quality assurance testing is completed, the treated wood is transferred CCA/ACZA diversionary structure.
25. Below each retort is a concrete retort sump that collects incidental drips and drip pad runoff. These sumps allow for solids settling, and the decant liquid flows into operational sumps, which also receive all process wastewater and storm water that contacts the process area. Water from the process sumps is filtered and stored for recycling in making the wood treating solutions.
26. The process sumps are constructed of reinforced concrete and have several coats of sealer overlain by a geotextile fabric cushion and a geosynthetic liner to minimize potential leakage. Solids are cleaned out annually and the liner system is inspected and repaired as needed at that time. The retort sumps also have leak inspection ports.
27. Solids that accumulate in the retort door sumps, operational sumps, secondary containment areas, and other process areas are periodically cleaned out. Liquids are recycled into the wood treating process according to chemical type, and dry solids are disposed of off-site at an appropriately permitted facility.

CLASS II SURFACE IMPOUNDMENT

28. Site runoff is directed to the surface impoundment for storage prior to treatment by an onsite treatment system for discharge to the sanitary sewer. The sewer permit with the City of Riverbank allows a flow rate of up to 35,000 gallons per day (approximately 24 gallons per minute (gpm)). The sewer permit requires treatment of the water to below MCLs and requires quarterly testing. The treatment system is capable of 20 gpm; however, the Discharger plans to increase the maximum flow rate to 60 gpm within the next year to provide more flexibility in water management. This would require a new permit from the City. The Discharger's water balance in Finding 35 below uses the current 20 gpm flow rate.
29. The surface impoundment was lined in 1984 and is a double-lined surface impoundment approximately 130 by 170 feet and 21 to 22 feet deep (17 feet below grade and 5 feet above grade). The double liner system is underlain by native clay soil. The total storage capacity at two feet of freeboard is approximately 2.2 million gallons. A table with storage capacity at each one-foot depth interval of the impoundment is included in Appendix D of the ROWD. The components of the liner system are, from top to bottom:
 - a) 45-mil scrim-reinforced hypalon geomembrane
 - b) 6-inch sand layer (LCRS)
 - c) Drainage fabric
 - d) 40-mil polyvinyl chloride geomembrane
 - e) Drainage fabric
 - f) 12-inch compacted clay liner with permeability less than 1×10^{-6} cm/s
30. The LCRS is a 6-inch sand layer and drainage fabric layer installed between the geomembrane layers. The bottom of the impoundment is sloped to a 4-inch perforated pipe extending the length of the north side wall, and a 4-inch solid pipe extending up the side wall to an automatic 25 gpm pump and 250-gallon tank that the Discharger states will be upgraded to a 2,000 gallon tank. There are also three vadose zone monitoring wells around the impoundment, two at the northwest corner and one along the east side.
31. The ROWD includes a proposed Action Leakage Rate (ALR) for the surface impoundment LCRS. The ALR is a maximum flow rate through the primary liner to the LCRS beyond which the Discharger is required to take actions to inspect and repair the primary liner system. The ALR was calculated using the 1992 USEPA method outlined in their guidance document *Action Leakage Rate for Leak Detection Systems*. Using this method, the Discharger calculated an ALR of 1.21 gpm or 1,735.9 gallons per day. This is similar to ALRs for other Class II surface impoundments in the Central Valley Region where Dischargers used the USEPA method to calculate the ALR. This Order sets the ALR for the surface impoundment at 1,700 gallons per day. Also, as proposed in the ROWD, this

Order requires a leak location survey of the liner system every three years (beginning in 2011), and requires any leaks discovered to be repaired.

32. Pursuant to Section 20375(c) of Title 27, the Discharger proposes to install a float switch in the surface impoundment at the two-foot freeboard level to prevent overfilling. This Order requires the installation of this float switch. This Order also requires a flow totalizing meter to record flow from the LCRS to the tank so that the ALR can be calculated. Leachate in the tank will be returned to the surface impoundment after any sampling required by the attached monitoring and reporting program.
33. The above ground portion of the surface impoundment is supported by a wooden retaining wall designed by a structural engineer (California structural engineer license 874). The ROWD states that the strength of these materials is adequate to withstand the additional 0.272 g acceleration earthquake force expected at this site with a factor of safety of 1.33.
34. Title 27 requires Class II surface impoundments to have capacity for seasonal precipitation, a 1,000-year 24-hour storm event, and to maintain at least two feet of freeboard. Since the wastewater being discharged to the surface impoundment is site runoff from an area much larger than the impoundment itself, the Discharger must maintain two feet of freeboard plus an amount equal to what would be generated from a 1,000-year 24-hour storm event over the larger area. The Discharger has been required to use the 100-year wet season distributed monthly for the "seasonal precipitation." This results in December through March being the wettest months with over 4 inches of rainfall in each month.
35. A detailed water balance for the surface impoundment is included in the ROWD. The water balance takes the following factors into account:
 - a) 264,000 gallons per month of water is reused for processing treated wood (based on 22 operating days per month).
 - b) Runoff from the drip pad and CCA/ACZA diversionary structure are captured and reused in processing. A separate water balance is included in the ROWD for these areas showing the facility has enough storage capacity for these areas during the height of the 100-year wet season.
 - c) An area of 418,825 square feet drains to the surface impoundment, and a runoff coefficient of 0.85 is assumed.
 - d) 633,600 gallons per month can be treated and discharged to the sanitary sewer (based on 20 gpm for 22 operating days per month). The Discharger proposes to increase the maximum flow rate to 60 gpm after treatment plant upgrades and re-permitting with the City; however, this is not critical to the water balance which assumes 20 gpm.

- e) Evaporation losses from the impoundment are 692,936 gallons per year, distributed monthly in accordance with monthly evaporation rates for Modesto from the California Irrigation Management Information System database.
 - f) The 100-year wet season (25.6 inches) distributed monthly in accordance with expected monthly rainfall patterns is used for expected monthly rainfall.
 - g) The impoundment must always maintain freeboard for the 1,000-year 24-hour storm event (3.54 inches of rainfall), plus 2 feet. This additional freeboard is 5 feet, for a total of 7 feet.
36. Based on the water balance that assumes the current 20 gpm flow rate to the sanitary sewer, the Discharger reports that the surface impoundment has sufficient capacity to maintain more than 7 feet of freeboard during the height of the 100-year wet season. The highest volume would be seen during March at 1.18 million gallons stored in the impoundment, with the 7-foot freeboard amount being 1.4 million gallons. Additionally, the Discharger reports that there is additional capacity to discharge to the sanitary sewer on non-operating days if needed.
37. This Order requires that the Discharger maintain at least 7 feet of freeboard in the surface impoundment, except in the event of 24-hour onsite rainfall totaling greater than or equal to 3.54 inches (1,000-year 24-hour event) when a minimum of 2 feet of freeboard is required. The attached monitoring and reporting program also requires the Discharger to record onsite rainfall and freeboard levels daily and report them in the required monitoring reports.

SUBSURFACE AND GROUNDWATER CONDITIONS

38. There are 15 groundwater monitoring wells at the site including MW-0, MW-1, MW-3, MW-4, MW-4B, MW-4C, and MW-7 through MW-13 (A, B, C). Monitoring wells MW-1, MW-3, and MW-7 are downgradient from the surface impoundment, and MW-4, MW-4-B, and MW-4C are immediately upgradient from the impoundment. Monitoring well MW-12 is the background well located about 800 feet upgradient from the impoundment. There are also three vadose zone monitoring wells (V-2, V-5, and V-6) located around the impoundment. The remaining groundwater monitoring wells (MW-0 and MW-8 through MW-13) monitor other areas of the site away from the impoundment. Locations of monitoring wells are included on Attachment B of this Order.
39. The ROWD states that the depth of many of the monitoring wells is insufficient to adequately monitor groundwater. The wells include MW-0, MW-1, MW-3, MW-4, MW-7, and MW-9. The ROWD states that wells MW-0, MW-4, MW-7, and MW-9 will be replaced "in the next couple of months." A work plan to replace these wells was approved by the Site Cleanup Program on 19 July 2010. Wells MW-1 and MW-3 are scheduled to be replaced within the next two years, and the ROWD states that they may be replaced by a single well. The ROWD also proposes an

additional well at the property boundary directly west of the surface impoundment to monitor potential migration of contamination and fluctuation of groundwater gradients. This Order requires a work plan for the replacement of wells that monitor the surface impoundment and for the installation of the proposed new well.

40. The Discharger has been monitoring groundwater quality on-site since 1984. At that time, chromium was detected at concentrations up to 228 ug/L in one groundwater monitoring well (MW-4) near the surface impoundment, which was unlined at the time. The Discharger extracted groundwater from that area and discharged it to the storm water recycle pond until the chromium concentration declined to below 50 ug/L in March 1986. Groundwater extraction was then discontinued.
41. Following discovery of the groundwater degradation, the Discharger installed the liner system in the impoundment and completed other improvements to minimize the potential for groundwater impacts, including paving the areas where treated wood is stored for shipping.
42. During the fall 2004 monitoring event, elevated levels of chromium were detected in monitoring wells MW-9, and then MW-4. In 2006, the Central Valley Water Board's Site Cleanup Program began overseeing site investigation related to groundwater contamination. The Discharger has installed 6 additional monitoring wells and 21 soil borings. Groundwater contamination (elevated chromium) exists northwest and southeast of the impoundment, south of the CCA/ACZA diversionary structure, and west of the CCA processing retort. Total chromium immediately downgradient from the impoundment is currently about 26 to 36 ug/L, and is about 62 ug/L immediately upgradient. The Discharger states in the ROWD that the source of the chromium is still under investigation, but hypothesizes that it may result from the years the impoundment operated unlined and sections of the site were not paved. This Order does not include requirements related to the existing groundwater contamination since it is already being regulated by the Site Cleanup Program for all areas of the site. Locations of the soil borings, groundwater flow direction and gradient, and the chromium groundwater plumes as presented in the ROWD are shown on Attachment B.

SURFACE IMPOUNDMENT CLEAN-CLOSURE

43. A Preliminary Closure Plan (PCP) for the surface impoundment is included in Appendix J of the ROWD. Pursuant to Section 21400(a)(1) of Title 27, the PCP proposes clean-closure of the surface impoundment. The PCP proposes to decontaminate and dispose of the liner material at a Class III landfill. The clay portion of the liner will be tested and disposed of at a Class III landfill. The PCP assumes an additional 500 cubic yards of contaminated soil will need to be excavated and discharged to a landfill. Backfill will come from onsite soils from the southern 10 acres of the site.

44. The PCP includes an itemized cost estimate for third party costs to clean-close the surface impoundment. The total of the estimate is \$103,964 and includes a 10% contingency. This closure cost estimate is approved by the adoption of these WDRs. Pursuant to Section 22207(a) of Title 27, this Order includes a requirement for the Discharger to establish financial assurances for closure in accordance with the approved cost estimate naming the Central Valley Water Board as the beneficiary.

FINANCIAL ASSURANCES FOR CORRECTIVE ACTION

45. The cost estimate in the PCP includes a cost estimate for corrective action. The PCP assumes the treatment of 8 million gallons of groundwater utilizing a treatment system being developed to address current groundwater contamination under the Site Cleanup Program. Costs include the installation of two extraction wells with pumps, investigation and sampling costs, operation of the system for 2.79 years to extract 8,000,000 gallons of groundwater, and regulatory and consulting oversight costs. The total of the cost estimate for corrective action is \$158,829 and includes a 10% contingency. Pursuant to Section 22222 of Title 27, this Order includes a requirement for the Discharger to establish financial assurances for closure in accordance with the approved cost estimate naming the Central Valley Water Board as the beneficiary.

CEQA AND OTHER CONSIDERATIONS

46. This action to revise WDRs for this facility is exempt from the provisions of the California Environmental Quality Act (CEQA), Public Resources Code, Section 21000 et seq., in accordance with Title 14 CCR, Section 15301.
47. This Order implements:
- a. *The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition*; and
 - b. The prescriptive standards and performance goals of Title 27 of the California Code of Regulations, effective 18 July 1997, and subsequent revisions.
48. Federal regulations for storm water discharges promulgated by the U.S. Environmental Protection Agency (40 CFR Parts 122, 123, and 124) require specific categories of facilities which discharge storm water to obtain NPDES permits. Because the system is designed specifically to contain all storm water

onsite, the Discharger is exempt from regulation under the permit for the discharge of storm water associated with industrial activities.

49. Section 13267 of the California Water Code states, in part, *“(a) A regional board, in establishing...waste discharge requirements... may investigate the quality of any waters of the state within its region”* and *“(b) (1) In conducting an investigation..., 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 waters of the state 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 reports and the benefits to be obtained from the reports. In requiring these reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify evidence that supports requiring the person to provide the reports.”*
50. The technical reports required by this Order and the attached Monitoring and Reporting Program are necessary to assure compliance with these waste discharge requirements. The Discharger owns and operates the facility, and is responsible for the discharges of waste at the facility subject to this Order and is, therefore, subject to CWC Section 13267(b).

PROCEDURAL REQUIREMENTS

51. All local agencies with jurisdiction to regulate land use, solid waste disposal, and to protect public health have approved the use of this site for the discharges of waste to land stated herein.
52. The Central Valley Water Board notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge, and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
53. The Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.
54. Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with Section 13320 of the California Water Code and Title 23, California Code of Regulations Sections 2050 and following. The State Water Board must receive the petition by

5:00 p.m., 30 days after the date of the Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at:

http://www.waterboards.ca.gov/public_notices/petitions/water_quality

or will be provided upon request.

IT IS HEREBY ORDERED pursuant to Sections 13263 and 13267 of the California Water Code, that Order No. R5-2002-0036 is rescinded and Thunderbolt Wood Treating Company, Inc. and the Lovalvo Leonard & Grace Trust, Lovalvo Family 2005 Trust, their 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.

A. PROHIBITIONS

1. The discharge of 'hazardous waste' at this facility is prohibited. For the purposes of this Order, the terms 'hazardous waste' and 'designated waste' are as defined in Title 27.
2. Discharge of wastes to surface waters or surface water drainage courses is prohibited.
3. The discharge of wood treating solution or chemicals used therein onto any surface other than paved areas that drain to the process sumps is prohibited.
4. The discharge of storm water runoff containing wood treating process chemicals to any location other than the process sumps or the lined storm water recycle pond is prohibited.
5. The discharge of waste to the surface impoundment other than site runoff, surface impoundment leachate, monitoring well purge/well development water, treatment system back flush water, or extracted groundwater from an approved remedial action is prohibited. The discharge of extracted groundwater to the impoundment must be supported by an updated water balance and approved by the Executive Officer prior to discharge.
6. Placement or storage of treated wood products, debris, or materials that have contacted the treating solutions outside of the designated paved or paved and curbed areas is prohibited.

7. The discharge of any stormwater off the site is prohibited.
8. Processing operations and the storage of treated wood are prohibited in the southern, unpaved portion of the facility.

B. DISCHARGE SPECIFICATIONS

General Specifications

1. The discharge shall not cause a nuisance or condition or pollution as defined by the California Water Code, Section 13050.
2. On an annual basis, the Discharger shall inspect all paved areas and patch, seal, or re-pave as needed to minimize potential percolation through the pavement.
3. On an annual basis, the Discharger shall inspect and maintain all sump liners, and shall repair or replace linings as needed to prevent leakage.
4. The process sumps shall be drained, cleaned, and inspected annually.
5. Collected sludges and other solids shall be disposed of at a permitted disposal facility with containment classification appropriate for the classification of the waste.

Protection from Storm Events

6. Precipitation and drainage control systems shall be designed, constructed, and maintained to accommodate the anticipated volume of precipitation and peak flows from surface runoff under 1,000-year, 24-hour precipitation conditions.
7. Annually, prior to the anticipated rainy season but no later than **31 October**, any necessary construction, maintenance, or repairs of precipitation and drainage control facilities shall be completed.

Class II Surface Impoundment

8. The Class II surface impoundment shall have capacity for precipitation and site runoff from a 100-year wet season of 25.6 inches distributed at least monthly, a 1,000-year 24-hour storm event of 3.54 inches, and shall maintain at least 2 feet of freeboard. At least 7 feet of freeboard shall be maintained at all times except in the event of a storm equal to or exceeding the 1,000-year 24-hour design storm event in which case at least 2 feet of freeboard must be maintained.

9. Any direct-line discharge to a surface impoundment shall have fail-safe equipment or operating procedures to prevent overflowing to less than 2 feet of freeboard.
10. The Discharger shall operate the treatment system at its maximum flow rate within City permit limitations to regain as much surface impoundment capacity as possible following any precipitation event.
11. Prior to the wet season and by **1 November**, the surface impoundment shall have its full capacity available (be as empty as possible) to accommodate rainfall during the wet season. Minor amounts of water may be present in the impoundment at this time but no more than the minimum amount of water needed to operate the pump to the treatment system.
12. The surface impoundment shall be maintained to prevent scouring and/or erosion of the liner and other containment features at points of discharge to the impoundment and by wind-caused wave action at the waterline.
13. Leachate removed from the surface impoundment LCRSs shall be placed back into the surface impoundment after any required sampling for water stored in the holding tank. Any leachate holding tank shall be large enough to accommodate anticipated flows from the LCRS without overflowing, and shall be able to automatically discharge back to the surface impoundment in the event of overflowing.
14. The **Action Leakage Rate (ALR)** for the Class II surface impoundment is **1,700 gpd** or 51,000 gallons over a 30-day period. If leachate generation in the LCRS of the Class II surface impoundment exceeds the either ALR, the Discharger shall immediately take steps to locate and repair leak(s) in the liner system and immediately notify the Central Valley Water Board. If repairs do not result in a leakage rate less than the required ALR, the Discharger shall immediately notify the Central Valley Water Board. The notification shall include a timetable for remedial action to repair the upper liner of the surface impoundment or action necessary to reduce leachate production.
15. The LCRS shall be operated and maintained to collect twice the anticipated daily volume of leachate generated by the WMU and to prevent the buildup of hydraulic head on the underlying liner at any time. The depth of fluid in the LCRS shall be kept at the minimum needed to ensure efficient pump operation.
16. The LCRS shall be designed and operated to function without clogging through the scheduled closure of the surface impoundment. The surface impoundment shall be equipped to facilitate annual testing to demonstrate proper operation as required by Section 20340(d) of Title 27.

17. If leakage is detected by the vadose zone monitoring system of a surface impoundment, then the Discharger shall immediately notify the Central Valley Water Board in writing in seven days. Notification shall include a timetable for remedial action to repair the liners of the impoundment.
18. The depth of the fluid in the LCRS of the Class II surface impoundment shall be kept at the minimum needed for efficient pump operation given the pump intake height and cycle frequency.
19. Sediment or solids that accumulate in the Class II surface impoundment shall be removed when necessary to maintain the designed storage capacity. Sludge and solids removal shall be accomplished in a manner that ensures the continued integrity of liners and leachate collection systems in accordance with the facility's operations plan. Prior to disposal of these solids, sufficient samples shall be taken for their characterization and classification pursuant to Title 27.
20. Following sediment/solids removal from the Class II surface impoundment, the liner system shall be inspected for damage within 30 days and any damage shall be repaired within 60 days prior to the discharge of additional wastewater.
21. The Discharger shall conduct a leak location survey of the upper liner system of the surface impoundment at least once **every three years** beginning in the year **2011**. Any leaks shall be repaired and a report documenting the survey and repairs shall be included in the Annual Monitoring Report for that year as required by the attached monitoring and reporting program.

CAA/ACZA Diversionary Structure

22. The CCA/ACZA diversionary structure shall be inspected for cracks, leaks, or damage to the pavement surface or concrete curbs at least annually, and shall be maintained and repaired to prevent leakage.
23. The Discharger shall not allow ponding of water in the CCA/ACZA diversionary structure except around the sump area during and within one hour after precipitation events exceeding an intensity of 0.25 inches per hour.
24. Water pumped from the CCA/ACZA diversionary structure shall be discharged to fully contained tanks for reuse in the wood treating process.
25. The Discharger shall provide at least 253,500 gallons of tank containment capacity for water pumped from the CCA/ACZA diversionary structure and the drip pad in accordance with the water balance in Table 5 of the August 2010 ROWD, which is based on cumulative storage needed during a 100 year wet season distributed monthly. Water from the CCA/ACZA diversionary structure may only be discharged to the Class II surface

impoundment on an emergency basis in the event that tank capacity is anticipated to be exceeded, the impoundment has sufficient capacity, and Central Valley Water Board staff has been notified.

26. All tanks shall be equipped with fail-safe devices to prevent overfilling.

C. DESIGN AND CONSTRUCTION SPECIFICATIONS

Class II Surface Impoundment

1. The Class II surface impoundment shall be equipped with a double liner system and LCRS as described in the August 2010 ROWD and in Finding 29 of this Order.
2. The Class II surface impoundment shall have permanent markings on the liner, or a permanent freeboard gauge so that the freeboard can be observed and recorded at any time. The markings or gauge shall have increments no greater than 6-inches.
3. Materials used to construct liners shall have appropriate physical and chemical properties to ensure containment of discharged wastes over the operating period of the surface impoundment.
4. Materials used to construct the LCRS shall have appropriate physical and chemical properties to ensure the required transmission of leachate over the life of the surface impoundment.

CAA/ACZA Diversionary Structure

5. The CAA/ACZA diversionary structure shall be paved with asphaltic concrete and have a 12 to 18 inch concrete curb or berm around it as described in the August 2010 ROWD and in Finding 22 of this Order.
6. The sump or sumps in the CAA/ACZA diversionary structure shall be constructed of precast concrete pipe set into a concrete slab and completely surrounded on the sides and bottom by a sealed minimum 40-mil geomembrane liner.
7. The sump pump or pumps in the CCA/ACZA diversionary structure shall be capable of preventing ponding outside of the sump during rainfall intensity 0.25 inches per hour or less.

D. CLOSURE SPECIFICATIONS

1. At closure of the Class II surface impoundment, the Discharger shall clean-close the unit pursuant to Section 21400(a)(1) of Title 27. All precipitates, settled solids, liner materials, and adjacent natural geologic materials contaminated by wastes, shall be completely removed and discharged to an appropriately permitted landfill facility. If after reasonable attempts to remove contaminated natural geologic materials, the Discharger demonstrates that removal of all remaining contamination is infeasible, the impoundment shall be closed as a landfill pursuant to Section 21400(b)(2)(a) of Title 27.
2. Prior to closure, the Discharger shall submit a Final Closure Plan prepared by a California-registered civil engineer or certified engineering geologist, and that contains all applicable information required in Section 21769 of Title 27. The plan shall include elements proposed in the August 2010 Preliminary Closure Plan included in Appendix I of the ROWD, and shall meet the requirements of this Order.

E. FINANCIAL ASSURANCES

1. By **1 June 2011**, pursuant to Section 22207 of Title 27, the Discharger shall submit a report showing that it has established an irrevocable \$103,964 **closure fund** with the Central Valley Water Board named as beneficiary to ensure closure of the Class II surface impoundment in accordance with the approved August 2010 Preliminary Closure Plan (PCP). The financial assurances mechanism shall be one listed in Section 22228 of Title 27 that the Discharger is eligible for. The Discharger shall either fully fund the mechanism by 1 June 2011 or may propose a payment schedule. If the Discharger proposes a payment schedule to fund the mechanism, it shall submit a report by **1 June 2012** showing that the mechanism is fully funded.
2. By **1 June 2011**, pursuant to Section 22222 of Title 27, the Discharger shall submit a report showing that it has established an irrevocable \$158,829 **corrective action fund** with the Central Valley Water Board named as beneficiary to ensure funds are available to address a known or reasonably foreseeable release from the Class II surface impoundment. The financial assurances mechanism shall be one listed in Section 22228 of Title 27 that the Discharger is eligible for. The Discharger shall either fully fund the mechanism by 1 June 2011 or may propose a payment schedule. If the Discharger proposes a payment schedule to fund the mechanism, it shall submit a report by **1 June 2012** showing that the mechanism is fully funded.
3. By **1 June** of each year, the Discharger shall submit a report to the Central Valley Water Board that reports the fund balance and the adjustments the

financial assurance fund or funds to account for inflation in accordance with Section 22236 of Title 27.

F. PROVISIONS

1. The Discharger shall comply with the Standard Provisions and Reporting Requirements for Discharges Regulated by Title 27 CCR, dated September 2003, which are hereby incorporated into this Order. The Standard Provisions and Reporting Requirements contain important provisions and requirements with which the Discharger must comply. A violation of any of the Standard Provisions and Reporting Requirements is a violation of these waste discharge requirements.
2. The Discharger shall comply with Monitoring and Reporting Program No. R5-2010-____, which is attached to and made part of this Order. A violation of Monitoring and Reporting Program No. R5-2010-____ is a violation of these waste discharge requirements.
3. All technical reports required herein that involve planning, investigation, evaluation, or 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. 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.
4. The following reports shall be submitted pursuant to Section 13267 of the California Water Code and shall be prepared by a California-registered professional:
 - a. By **1 March 2011**, the Discharger shall submit a report with documentation of the completion of construction of the sump or sumps and installation of pumps and controls for the CCA/ACZA diversionary structure in compliance with this Order as described in the Design and Construction Specifications for the CCA/ACZA diversionary structure. The report shall also show that the installation of a float switch or other fail-safe device has been installed in the impoundment at the two-foot freeboard level. The report shall also show that a flow totalizer has been installed to measure leachate from the LCRS.
 - b. By **1 April 2011**, the Discharger shall submit a work plan to install the proposed new groundwater monitoring well to the west of the Class II

surface impoundment, and a well or wells to replace MW-1 and MW-3. The work plan shall include all information required in Attachment C, which is incorporated into and made a part of this Order.

- c. By **1 September 2011**, the Discharger shall submit a well installation report for the new well installed to the west of the Class II surface impoundment, and the well or wells to replace WM-1 and MW-3. The well installation report shall include all information required in Attachment C.
5. The Discharger shall maintain a copy of this Order at the facility and make it available at all times to facility operating personnel, who shall be familiar with its contents, and to regulatory agency personnel. All other site operating records required by this Order may be maintained offsite, but must be available to Central Valley Water Board staff within 48 hours of being requested.
6. The Discharger shall maintain legible records of the volume and type of waste discharged to and from the surface impoundment and the manner of the discharge. Such records shall be maintained at the facility until the beginning of the post-closure maintenance period. These records shall be available for review by representatives of the Central Valley Water Board and of the State Water Resources Control Board.
7. The Discharger shall comply with all applicable provisions Title 27 that are not specifically referred to in this Order.
8. The Discharger shall, in a timely manner, remove and relocate any wastes discharged at this facility in violation of this Order and of the California Water Code.
9. The Discharger shall immediately notify the Central Valley Water Board of any flooding, equipment failure, slope failure, or other change in site conditions which could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures.
10. In the event of any change in control or ownership of the facility or disposal areas, 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 Central Valley Water Board, and a

statement. The statement shall comply with the signatory paragraph of Standard Provision VIII.A.5 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.

11. For the purpose of resolving any disputes arising from or related to the California Water Code, any regulations promulgated thereunder, these WDRs, or any other orders governing this site, the Discharger, its parents and subsidiaries, and their respective past, present, and future officers, directors, employees, agents, shareholders, predecessors, successors, assigns, and affiliated entities, consent to jurisdiction of the Courts of the State of California.
12. The Central Valley Water Board will review this Order periodically and may revise requirements when necessary.
13. This Order shall take effect upon the date of adoption.

I, PAMELA C. CREEDON, 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 _____.

PAMELA C. CREEDON, Executive Officer

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