Missouri Department of Natural Resources

STATEMENT OF BASIS

PROPOSED FINAL REMEDY

ALCOLAC, INCORPORATED
24732 RANDALL ROAD
SEDALIA, MISSOURI
EPA ID# MOD084093368

Facility Type: Former *Resource Conservation and Recovery Act* (RCRA) Interim Status Facility that stored hazardous wastes as part of its chemical manufacturing processes
Contaminants: N/A
Media: N/A
Proposed Final Remedy: No Further Action with Institutional Controls

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INTRODUCTION

This Statement of Basis (SB) describes the proposed corrective measures (proposed final remedy) for the Alcolac, Incorporated (Alcolac), facility in Sedalia, Missouri. Alcolac is a wholly owned subsidiary of Rhodia, Incorporated. Reasons for recommending the proposed final remedy are also presented. The Missouri Department of Natural Resources (Department) prepared this SB as part of the requirements of Code of State Regulations 10 CSR 25-8.124(7).

This document highlights the information that is presented in full in the facility Administrative Record. Among other documents, the Administrative Record includes the approved Description of Current Conditions Report (DCCR), dated March 27, 2006; approved Missouri Risk-Based Correction Action (MRBCA) Tier 1 Risk Assessment Report, dated April 3, 2007; and approved Supplemental Groundwater Sampling Report, dated April 13, 2011. The Department invites the public to review the Administrative Record for a more complete understanding of the historical environmental issues and corrective action activities that have been conducted at the Alcolac facility. The Administrative Record locations are provided at the end of this document.

The Department invites the public to review and offer written comments on the proposed final remedy from July 15, 2013 to August 14, 2013. A public hearing has not been scheduled; however, anyone can request a public hearing about the proposed final remedy during the 30-day public comment period. The Department will approve a final remedy for the site only after the

public comment period has ended, all comments have been reviewed, and responses to those comments have been prepared. Public participation information is provided in detail at the end of this document.

FACILITY DESCRIPTION

Alcolac is located at 24732 Randall Road in Sedalia, Missouri. The property is commercial zoned and occupies approximately 227.78 acres. The former manufacturing portion of the facility is comprised of 56.39 acres and is currently owned by Rhodia, Incorporated. The remaining 171.39 acres consists of crop fields and is owned by JBK Farms, LLC. The property lies within the southeast 1/4 of the northwest 1/4, the southwest 1/4 of the northeast 1/4, the east 1/2 of the southwest 1/4, and the west 1/2 of the southeast 1/4 of Section 36, Township 46 North, Range 21 West, in Pettis County. The geographic coordinates for the site are 38°42'58" North latitude and 93°11'3" West longitude. A site location map is included as Figure 1 and an aerial view of the facility is included as Figure 2.

The Katy Trail State Park borders the site on the north, with agricultural and residential property north of the Katy Trail. The Sedalia Memorial Airport borders the site on the south and east. Agricultural and residential properties border the site on the east and west and south of the airport.

FACILITY HISTORY

Alcolac operated a specialty chemicals manufacturing facility and stored hazardous waste at the Sedalia plant from 1977 to 1991. Alcolac was acquired by RTZ Corporation in the 1980s and later purchased by Rhone-Poulenc SA in 1989. In 1999 Rhone-Poulenc spun Rhodia, Incorporated, off as a new company. The Sedalia plant is currently owned by Alcolac, a wholly owned subsidiary of Rhodia, Incorporated.

Alcolac produced a broad range of products with a variety of end-use applications in approximately twenty different industries. Alcolac's two major product lines included surface agents, which were used in cosmetics, toiletries, consumer and industrial cleaning products, and a variety of textile operations, and functional monomers which were used to prepare polymers for adhesives, paper coatings, textiles, plastics, surface coatings, petroleum recovery, and municipal and industrial water treatment. Production operations at the plant stopped in 1991 and the equipment was dismantled in 1992. The facility is currently vacant and there are no active manufacturing operations.

The facility consisted of a Surfactant Plant and a Monomer Plant. When operating, wastes from the Surfactant and Monomer Plants were stored in tanks and drums for off-site disposal or sent to the facility's on-site wastewater treatment plant. Characteristic hazardous

wastes handled by the facility included D001 (ignitable), D002 (corrosive), and D008 (lead). The container storage area was 288 square feet and was capable of holding 142 fifty-five-gallon drums. Two 3960-gallon tanks handled D002 waste; one 6000-gallon tank held the aqueous waste from the Monomer plant; and one 6000-gallon tank held the waste from the Surfactant Plant.

The property also contained four bio-oxidation ponds, three salt ponds, two cooling water ponds, three spray irrigation areas, two sedimentation ponds, a lake, and a former day pond. The wastes handled by these units included storm water runoff, brine from the Monomer Plant, wastewater effluent, cooling water, truck tanker sterilization steam condensate, irrigation runoff, and container rinse waters. The ponds ranged in size from 50 feet by 50 feet by 8 feet for the Day Pond to 250 feet by 250 feet by 10 feet for the two cooling water ponds.

REGULATORY HISTORY

Alcolac previously operated under the interim status portions of the federal and state hazardous waste laws, 40 CFR Part 265 and 10 CSR 25-7.265. When Congress passed the federal law in 1980, all existing facilities that treated, stored, or disposed of hazardous waste in a manner that would necessitate a hazardous waste permit were required to get such a permit. Alcolac submitted their RCRA Part A permit application on November 19, 1980, and RCRA Part B permit application on February 16, 1983. Thereafter, Alcolac decided not to pursue a hazardous waste permit and to close the units that would otherwise be subject to permitting.

In 1988 the Department accepted the facility's closure certification for its hazardous container and tank storage areas. Alcolac is subject to corrective action by virtue of having completed closure of its interim status hazardous waste management units after the effective date of the Hazardous and Solid Waste Amendments to RCRA. Alcolac is not subject to the hazardous waste permitting requirements of the Missouri Hazardous Waste Management Law or RCRA for post-closure care by virtue of having "clean closed" its interim status hazardous waste management units.

The following is a timeline of important dates in Alcolac's regulatory history:

- November 19, 1980 – Alcolac submitted a Part A permit application.
- February 16, 1983 – Alcolac submitted a Part B permit application.
- March 10, 1988 – Alcolac submitted a *Clean Closure Certification Report* to the Department.
- March 31, 1988 – The Department confirmed the certification was completed within requirements of the approved work plan and accepted the certification for the container and tank storage areas.

- March 31, 1988 – The Department released Alcolac from financial assurance obligations for closure.
- June 30, 1993 – A.T. Kearney, Incorporated, prepared a RCRA Facility Assessment (RFA) Report, on behalf of the U.S. Environmental Protection Agency (EPA).
- April 20, 2001 – Alcolac submitted the *Closure Plan, Bio-Oxidation Ponds, and Salt Pond* to comply with the requirements of the Department's Water Protection Program (WPP).
- April 4, 2003 – Alcolac submitted a *Closure Certification Report of the Bio-Oxidation Ponds and Salt Pond* to comply with the requirements of the Department's WPP.
- April 9, 2003 – The Department's WPP terminated the land disturbance and discharge permits for the Bio-Oxidation Ponds and Salt Pond.
- January 26, 2004 – Alcolac prepared a *Risk Evaluation Results Former Spray Irrigation Areas* to determine if the spray irrigation areas were safe to plant field crops.
- March 27, 2006 – Alcolac prepared a *Description of Current Conditions Report(DCCR).*
- March 29, 2007 – Alcolac prepared a *Missouri Risk Based Corrective Action (MRBCA) Tier 1 Risk Assessment Report*.
- August 7, 2007 – The Department completed and transmitted to Alcolac the RCRA Corrective Action Environmental Indicator (EI) Evaluations (RCRAInfo Codes CA750-Migration of Contaminated Groundwater Under Control and CA725-Current Human Exposures Under Control) affirming that migration of contaminated groundwater and current human exposures were/are under control.
- November 21, 2007 – The Department approved the DCCR and MRBCA Tier 1 Risk Assessment Report.
- March 20, 2008 – An Environmental Covenant, signed by the Department on March 4, 2008, and Alcolac on January 25, 2008, was filed with the Pettis County Recorder of Deeds. The Covenant restricts site use to nonresidential and prohibits the use of shallow groundwater.
- February 3, 2009 – The Department completed a Ready for Anticipated Use Determination documenting that the EI Evaluations were affirmative and that necessary remedy elements and institutional controls were in place such that the facility property was/is ready for reuse.
- March 29, 2010 – The Department and the EPA submitted a letter to Alcolac requesting an additional round of groundwater sampling at the facility.
- May 17, 2010 – Alcolac prepared a *Quality Assurance Project Plan/Groundwater Sampling and Analysis Plan* for additional groundwater sampling at the facility.
- April 13, 2011 – Alcolac submitted the *Supplemental Groundwater Sampling Report*.

The following areas were decommissioned and closed according to the requirement of the Department's WPP, in coordination with the Department's Hazardous Waste Program. The day pond, which was constructed in 1977 for use with the wastewater treatment system, was closed in 1991 by filling with clean soil. Two of the three salt ponds were filled with clean soil in 1983

and 1991. The remaining salt pond and four bio-oxidation ponds were closed in 2003, according to the Department-approved *Closure Plan, Bio-Oxidation Ponds and Salt Pond.*

Surface water and sediment sampling was conducted during closure. Comparison of surface water and sediment samples to the MRBCA Tier 1 Risk Based Target Levels (RBTLs) and the EPA Region 9 Preliminary Remediation Goals demonstrated that surface water and sediment concentrations did not exceed screening levels for residential or nonresidential use. A retention study of the clay liners for the bio-oxidations ponds was conducted during closure activities. This study determined that the clay-lined ponds had not leaked during operation. The Department's WPP inspected the ponds on April 8, 2003, to determine that they were closed according to the approved closure plan. The Department's WPP terminated the land disturbance and discharge permits on April 9, 2003.

In 2004 Alcolac anticipated selling off portions of the Sedalia, Missouri, facility property that were not occupied by the former plant manufacturing operations. As a result, Alcolac submitted a *Risk Evaluation for the Spray Irrigation Areas*. The purpose of this investigation was to determine whether agricultural use of the former spray irrigation areas were safe for the farmer and consumers of crops grown in those areas. Pathways were evaluated for an adult farmer and consumers of crops and included soil ingestion, dermal absorption, vapor inhalation, inhalation of suspended particles, and ingestion of crops. Based on this evaluation, the former spray irrigation areas were determined to be safe to use for agricultural purposes.

An RFA, dated June 30, 1993, was prepared by A.T. Kearney, Incorporated, on behalf of the EPA. The RFA identified 21 solid waste management units (SWMUs) and 7 areas of concern (AOCs), of which 14 SWMUs and one AOC were recommended for additional investigation.

In 2006 Alcolac prepared a DCCR presenting all environmental sampling, investigations, and unit closures conducted up to that time. The DCCR included a data screening, comparing the existing site subsurface characterization data to RBTLs in the MRBCA Guidance and the EPA Regional Screening Levels (RSLs). In 2007 Alcolac submitted a *MRBCA Tier 1 Risk Assessment Report* at the Department's request, to further evaluate site data and address remaining elements necessary to adequately characterize the site. The Risk Assessment evaluated the risks associated with leaving soil and groundwater in place based on current and proposed future use of the property. The Risk Assessment concluded that allyl alcohol and methanol were above the MRBCA Default Target Levels, but below the MRBCA RBTLs for nonresidential land use and the EPA RSLs for industrial use. From 1990 to 1993, monitoring of the shallow groundwater produced sporadic/inconsistent detections of methylene chloride, benzene, 1,2-dichloropropane, and tetrahydrofuran that exceeded the MRBCA Tier 1 RBTLs for domestic consumption, but were acceptable for residential or non-residential land use based on potential dermal contact and indoor inhalation of vapor emissions. The Risk Assessment also

concluded that any releases at the facility did not pose unacceptable risks to ecological receptors. The Department approved the DCCR and the Risk Assessment on November 21, 2007.

The Risk Assessment proposed implementation of Activity and Use Limitations, including restricting the facility property to nonresidential use and prohibiting the use of shallow groundwater for domestic purposes, including as a source for drinking water. Based on the recommendations, the Department and Alcolac executed an Environmental Covenant for the facility property, restricting the property to Nonresidential Land Use and prohibiting the drilling or use of shallow groundwater (groundwater less than 50 feet [ft] below ground surface [bgs]) for domestic purposes. The Environmental Covenant was filed with the Pettis County Recorder of Deeds on March 20, 2008.

Due to the age of the groundwater data contained in the DCCR, the Department and the EPA requested additional groundwater sampling to obtain data that represented current groundwater quality, to be used in support of final facility regulatory determinations. Alcolac sampled the six existing on-site groundwater monitoring wells in December 2010 and reported the findings in a Supplemental Groundwater Sampling Report, dated April 13, 2011. The sampling results for volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs), including those sporadically detected from 1990 to 1993, were below analytical detection limits in all on-site groundwater monitoring wells. Arsenic was detected and the concentration compared to the federal Maximum Contaminant Level for drinking water. Cobalt was detected and the concentration compared to RSLs. Manganese was detected and the concentration compared to the federal secondary drinking water standards. Arsenic, cobalt, and manganese concentrations were above their respective comparison standards in one well. Their presence was localized and is likely attributable to background metals concentrations in the soil expressed as turbidity in the unfiltered groundwater samples for metals.

The surficial materials at the Alcolac site consist of 10 to 15 ft of unconsolidated clay to silty clay. The depth to bedrock is approximately 12 to 15 ft bgs. The uppermost bedrock consists of highly weathered gray-yellow limestone. Monitoring wells in the uppermost bedrock at Alcolac are completed at 33 to 39 ft bgs. Three of the on-site monitoring wells at Alcolac are screened in the silty clay and three are screened in the uppermost limestone bedrock. Three monitoring wells at an adjacent site in Sedalia, Missouri, are screened in the deep carbonate rock at 147 to 171 ft bgs. The deep carbonate rock consists of dolomitic limestone. The boring logs for the deep monitoring wells at the adjacent site demonstrated a dry (unsaturated) bedrock zone between approximately 40 to 160 ft bgs. Groundwater is again encountered at about 160 ft bgs. Significant differences in static water levels between the upper limestone bedrock and the deep carbonate unit, greater than 100 ft of dry bedrock identified in the deep boring logs, and the absence of contamination in the deep carbonate bedrock indicates that the upper limestone and the deep carbonate bedrock are not hydraulically connected.

According to the *Sedalia Water Department and Water Supply Study, Spring Fork Lake, Sedalia, Missouri*, the City of Sedalia obtains their drinking water from two sources: Spring Fork Lake, located approximately 5 miles south of Sedalia, and nine deep bedrock wells located throughout the area, bottoming at approximately 1500 bgs. One of the deep bedrock wells is located south of the site, adjacent to the intersection of Boonville Road and Randall Road. Numerous private wells are also located in the area. The closest known private well is located approximately 350 ft west of the Alcolac property. This well is screened at a depth of approximately 415 ft and is cross-gradient with respect to the shallow groundwater flow on the Alcolac property. The nearest known downgradient well is screened at a depth of approximately 130 ft and is approximately 1 mile southeast of the Alcolac property.

Missouri's definition of a potable aquifer, within the MRBCA document, is contained in *Appendix G, A Method for Determining if a Water Bearing Unit Should Be Considered an Aquifer*. A potable aquifer is defined by two criteria: quality and quantity. The water quality must be such that consuming the water does not pose an immediate or long-term risk to human health and the water-bearing materials must yield at least enough water to serve a useful purpose.

To be considered a viable water supply, a domestic well should be able to produce a minimum of 0.25 gallons of water per minute (360 gallons per day) for a period of 10 days. The presumed rate of 0.25 gallons per minute (gpm) is in itself very conservative, since it is hard to make practical use of such a small amount of water as a residential supply, especially in areas where other water supply sources are abundant. In the Sedalia area, hydraulic conductivity ranges from 6.00×10^{-7} to 6.00×10^{-5} centimeters per second (cm/sec) in the saturated portion of the clay zone to 4.00×10^{-5} cm/sec in the upper limestone saturated zone. Using the above hydraulic conductivity ranges, the average saturated thickness necessary to produce 0.25 gpm for 10 days ranges from 31.4 to 308 ft for the clay zone to 38.4 ft for the upper limestone bedrock. At the Alcolac property, the average saturated thickness is 6.5 ft for the clay and 22 ft for the upper limestone bedrock. Based on these parameters, the shallow water bearing units consisting of the clay zone and the upper limestone bedrock appear incapable of producing a sufficient volume of water to be considered a viable domestic water source.

Using a conservative hydraulic conductivity estimate range of 1×10^{-5} to 1×10^{-4} cm/sec, an effective porosity of 5 percent for the saturated zone, a calculated average horizontal hydraulic gradient of 0.01 ft/ft, and a conversion factor of 2,836.65 ft/day, the calculated horizontal groundwater flow velocity at the Alcolac facility ranges from 2.07 to 20.7 ft per year. Groundwater flow in the shallow saturated zone at Alcolac is to the southeast. Measuring from the storage areas near the center of the manufacturing area, it is approximately 1500 ft to the southeastern corner of the property and 900 ft to the eastern property boundary. Using the distance to the eastern property boundary (the shortest distance off site) and the calculated groundwater flow velocity range of 2.07 to 20.7 ft per year, it would take approximately 43 to 435 years for groundwater to migrate off site. Groundwater containing any residual

contaminants would take even longer since other factors impacting such movement, such as natural attenuation and retardation, are not factored into this migration rate estimate.

The Department's conclusions from the investigations performed to date at the Alcolac facility and the estimates/discussion contained in the preceding paragraphs are:

1. There are no significant releases from the SWMUs or AOCs to the soil and groundwater at the Alcolac facility.

2. There is no reasonable expectation or probability that the uppermost saturated zone consisting of the clay and upper limestone bedrock at the facility will be used as a source of domestic water supply due to water quantity limitations and the availability of other water supply sources.

3. The groundwater in the uppermost saturated zone consisting of the clay and upper limestone are not hydraulically connected to lower water bearing units that serve as a local/regional water supply. Any residual contaminants in the uppermost saturated zone are unlikely to experience substantial horizontal/off-site migration or impact any existing shallow wells in the vicinity of the facility or future deep wells that might access the deeper local/regional water supply aquifer.

4. Due to the uncertainties inherent in environmental investigations, estimates and risk management, the Department and Alcolac executed an Environmental Covenant, which is recorded in the chain of title for the property, as an additional protective measure. This covenant restricts the property to non-residential uses and prohibits use of the shallow groundwater (groundwater less than 50 ft bgs) for domestic purposes.

SUMMARY OF FACILITY RISKS

There are no known unacceptable risks to human health or the environment posed by residual low level contamination that may be present in limited areas at the facility.

PROPOSED FINAL REMEDY

Because the VOCs, SVOCs, and metals concentrations in soil and groundwater were below EPA's RSLs and background concentrations, the Department has determined that no further remedial work is necessary at the Alcolac facility. As a result, the proposed final remedy is No Further Action with existing institutional controls.

The final remedy includes the existing Environmental Covenant that was filed with the Pettis County Recorder of Deeds on March 20, 2008. The Environmental Covenant restricts the

property to Nonresidential Land Use and prohibits the drilling or use of shallow groundwater (groundwater less than 50 ft bgs) for domestic purposes.

REGULATORY MECHANISM

The Department proposes to release Alcolac from further regulation as a former interim status hazardous waste treatment, storage, and disposal facility subject to the corrective action requirements of the Missouri Hazardous Waste Management Law and regulations.

PUBLIC PARTICIPATION

The Department invites the public to review and offer written comments on the proposed final remedy from July 15, 2013 to August 14, 2013. During the 30-day public comment period, anyone can request a public hearing about the proposed final remedy and regulatory release. To request a public hearing, please submit a written request to Christine Kump-Mitchell, P.E., at the address below. The hearing request must state what issues are to be brought up during the hearing.

Comments on the proposed final remedy and regulatory release are more effective if they point out legal or technical issues or provide information that is not in the record. Please send written comments to Ms. Kump-Mitchell, Missouri Department of Natural Resources, 7545 South Lindbergh Boulevard, Suite 210, St. Louis, MO 63125-4839, or by e-mail to christine.kump@dnr.mo.gov.

At the end of the public comment period, the Department will review all written comments and any comments given at the public hearing, if one was held. The Department will write a summary and response to all comments and explain how each was addressed. The Summary and Response will be entered into the Administrative Record for the Alcolac facility. The Department will approve a final remedy for the site only after the public comment period has ended, all comments have been reviewed, and responses have been prepared to address the comments. The Department may modify the proposed final remedy or select another remedy based on new information or technical or legal issues brought up by the comments received during the public comment period.

MORE INFORMATION

The public can review and copy the Administrative Record, which includes all correspondence and reports relevant to the final remedy selection, at the following locations:

Sedalia Public Library*
(Temporary Library Location)
515 South Ohio Avenue
Sedalia, Missouri
Phone: 660-826-1314
*During normal business hours.

Missouri Department of Natural Resources*
1730 East Elm Street (lower level)
Jefferson City, Missouri
Phone: 573-522-3345
*By appointment only.

For more information about the proposed remedy or regulatory release, please contact Christine Kump-Mitchell, P.E., by telephone at (314) 416-2464 or 1-800-361-4827. Hearing- and speech-impaired individuals may reach Ms. Kump-Mitchell through Relay Missouri at 1-800-735-2966.