SWMU 24 - Discharge Pipe Area

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5.5.24 SWMU 24 – Discharge Pipe Area

The location of Solid Waste Management Unit (SWMU) 24, the Discharge Pipe Area, is shown on Figure 5.5.24-1a and SWMU 24 monitoring stations and sample locations are provided on Figure 5.5.24-1b. Beginning in the late 1960s, the Silver Bow Plant had a permit to discharge storm water runoff, uncontaminated cooling water and septic system water through a concrete discharge pipe running from the Plant to Silver Bow Creek. In 1972, a new septic system was installed to manage the septic system water, and a new pumping station was constructed to pump the uncontaminated cooling water to the tailing basin. The new pumping system did not function consistently, so the cooling water, as well as storm water runoff, continued to be discharged to Silver Bow Creek. In February of 1975, an improved pumping station, known as the Final Pump Station (SWMU 27), was completed and all of the uncontaminated cooling water and storm water runoff was pumped to the tailing basin. After February 1975, there was no discharge of water off of the property through the discharge pipe. The discharge point of the old concrete discharge line to Silver Bow Creek was covered with slag.

According to information from an interview with a former employee, elemental phosphorus was removed from Silver Bow Creek in the mid-1970s and again in 1979 at the end of the discharge line where the pipe discharged to Silver Bow Creek. In the mid-1970's, the removal operation resulted in removing approximately 2-½ to 3-½ cubic yards of elemental phosphorus-bearing materials from Silver Bow Creek. The elemental phosphorus-bearing materials were removed, placed in 4-5 precipitator pans and covered with water. Each pan had a capacity of roughly 2/3 cubic yard so the total volume of materials removed from the creek is estimated to be roughly 2-½ to 3-½ cubic yards. All of this material was placed in the clarifier and reprocessed with other crude phosphorus from the clarifier.

In 1979, Plant personnel again removed some elemental phosphorus from Silver Bow Creek where the pipe discharged to the creek. During this operation, 2-3 two gallon buckets of elemental phosphorus pieces were visually identified and were hand-picked from the creek bed. This material was also placed in the clarifier and reprocessed.

5.5.24.1 Discharge Pipe Removal

The Montana Department of Environmental Quality (MDEQ) is conducting a CERCLA remedial action for the Streamside Tailings Operable Unit (SSTOU) of the Silver Bow Creek/Butte Area NPL Site. In order to facilitate MDEQ's remedial work, Rhodia agreed to remove the discharge pipe north of German Gulch Road, clean and plug the pipe under the Road, and assist MDEQ in the handling

and disposal of any elemental phosphorus that may be encountered (*see* Administrative Order on Consent (AOC) issued and filed by U.S. EPA Region 8 on May 19, 2004). A separate Memorandum of Agreement (MOA) was entered into with MDEQ dated January 12, 2004 regarding the discharge pipe work in the floodplain portion of Parcel 26.

Rhodia removed and properly disposed of the pipeline and man ways in 2004, except for a small portion under German Gulch Road and the man ways on each side of the road, which was cleaned and plugged. Elemental phosphorus was encountered in a man way that was associated with the pipe under German Gulch Road. The man way was cleaned and the elemental phosphorus were removed and disposed of properly. No elemental phosphorus was found in the rest of the man ways, discharge pipe nor underneath the pipe. All of the pieces of pipe and man ways were stored on site at the west side of SWMU 17. Slag that covered the pipeline in the floodplain that had to be removed to excavate the pipe was stockpiled with other slag in Parcel 26. The removal of the discharge pipe was completed in accordance with the terms of the AOC and MOA in early June 2004. The completion report for this work is in Appendix 5.5.24-A.

While the contractor working for MDEQ was completing the clean-up of Silver Bow Creek under the SSTOU project during the summer of 2005, another portion of concrete discharge line was discovered near the creek bank. There was some elemental phosphorus on the pipe and in the material surrounding the pipe. Because some of the pipe broke into pieces while it was being uncovered, all of this section of discharge line and the elemental phosphorus were placed in drums and labeled as hazardous waste and sent to hazardous waste disposal facility. Approximately forty (40) 30-gallon drums were filled with this newly-discovered discharge pipe waste, which contained a small amount of elemental phosphorus commingled with tailings from Silver Bow Creek and slag. These drums were sent offsite for incineration at a hazardous waste disposal facility in August 2005. A copy of the manifest is included in the completion report in Appendix 5.5.24-A. Note that the manifest shows a total of 98 drums of hazardous waste. The additional 58 drums resulted from other SSTOU tailings that contained elemental phosphorus, which were collected during the SSTOU work. Elemental phosphorus was separated from the tailings, and the elemental phosphorus and some commingled tailings were placed in the 58 drums. On September 12, 2005, 54 additional drums of elemental phosphorus with commingled SSTOU tailings were shipped to a hazardous waste disposal facility. After the elemental phosphorus had been removed from the tailings, these clean tailings were stockpiled onsite within the SSTOU along with other tailings mixed with slag.

Rhodia submitted an Updated Completion Report to U.S. EPA Region 8 on August 17, 2005 (*see* Appendix 5.5.24-A). U.S. EPA Region 8 approved the completion report and terminated the Administrative Order on Consent in a letter dated September 20, 2005.

MDEQ has restored the Silver Bow Creek floodplain area in accordance with their remediation action plan for the SSTOU.

5.5.24.2 RFI Investigation and Results

On May 20, 2009, Rhodia video logged the interior of the discharge pipe from the manhole south of German Gulch Road using a track-mounted video camera. Figure 5.5.24-1b shows the portion of the discharge pipe that was video logged and a copy of the video log is provided in Appendix 5.5.24-B. The camera system was able to travel about 200 feet through the 12-inch diameter vitreous clay sewer pipeline to the south before encountering an obstruction at the next manhole which, based on the video, was filled with debris. This manhole could not be located at the surface and is apparently located below fill. The south portion of the video logged discharge pipe did not contain significant amounts of solids or sludge, although a minor amount of wet sludge was observed about 6 feet from the manhole. No foreign material was observed in the pipe joints.

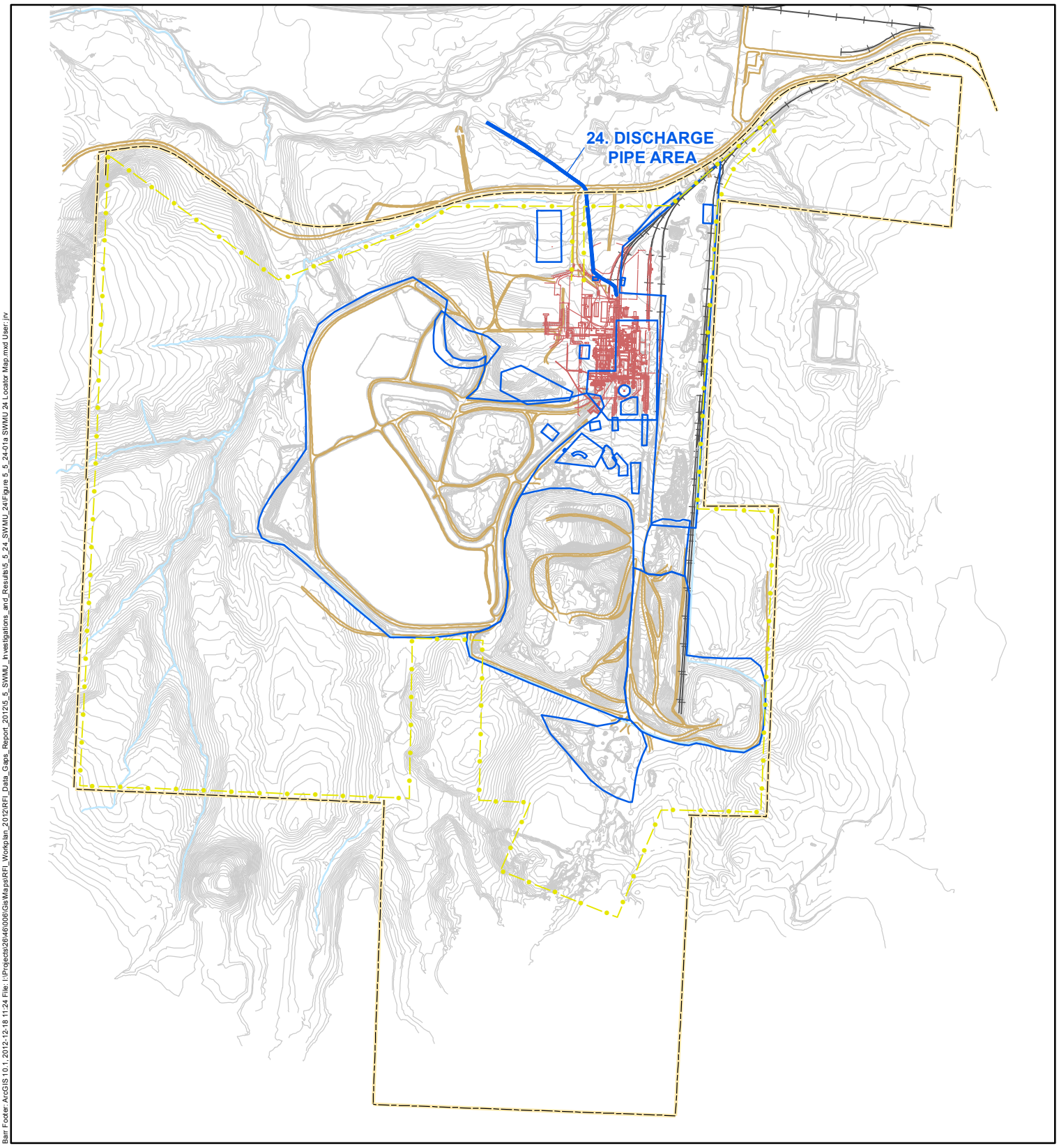
The sewer was then video-logged north of the manhole for a distance of 6 feet before encountering a joint offset that prevented further logging of the pipe. The north portion of the video logged discharge pipe did not contain significant amounts of solids or sludge and no foreign material was observed in the visible pipe joints. The next manhole to the north (i.e., north side of German Gulch Road) was filled with concrete during the 2004 discharge pipe removal activities as described in Appendix 5.5.24-A.

5.5.24.3 Conclusions

- The video log shows some structural issues associated with the unused discharge pipe. However, this pipe has not been in use since the 1970s and there are no plans to reuse this pipe. Further, the discharge pipe from the south side of German Gulch Road to Silver Bow Creek has been either plugged with cement or removed. The video log confirms that the discharge pipe did not contain significant amounts of solids or sludge in the accessible portion of the discharge pipe.

- Elemental phosphorus containing materials were not observed in the pipe, pipe joints, man ways (except for very small amount in one man way), or underneath the pipeline. Additional investigation of the discharge pipe is not warranted.

Figures



SWMU 24
Other SWMUs
Elevation Contour
Drainage
Railroad
Road
Former Plant Structures
Property Boundary
Fence Line

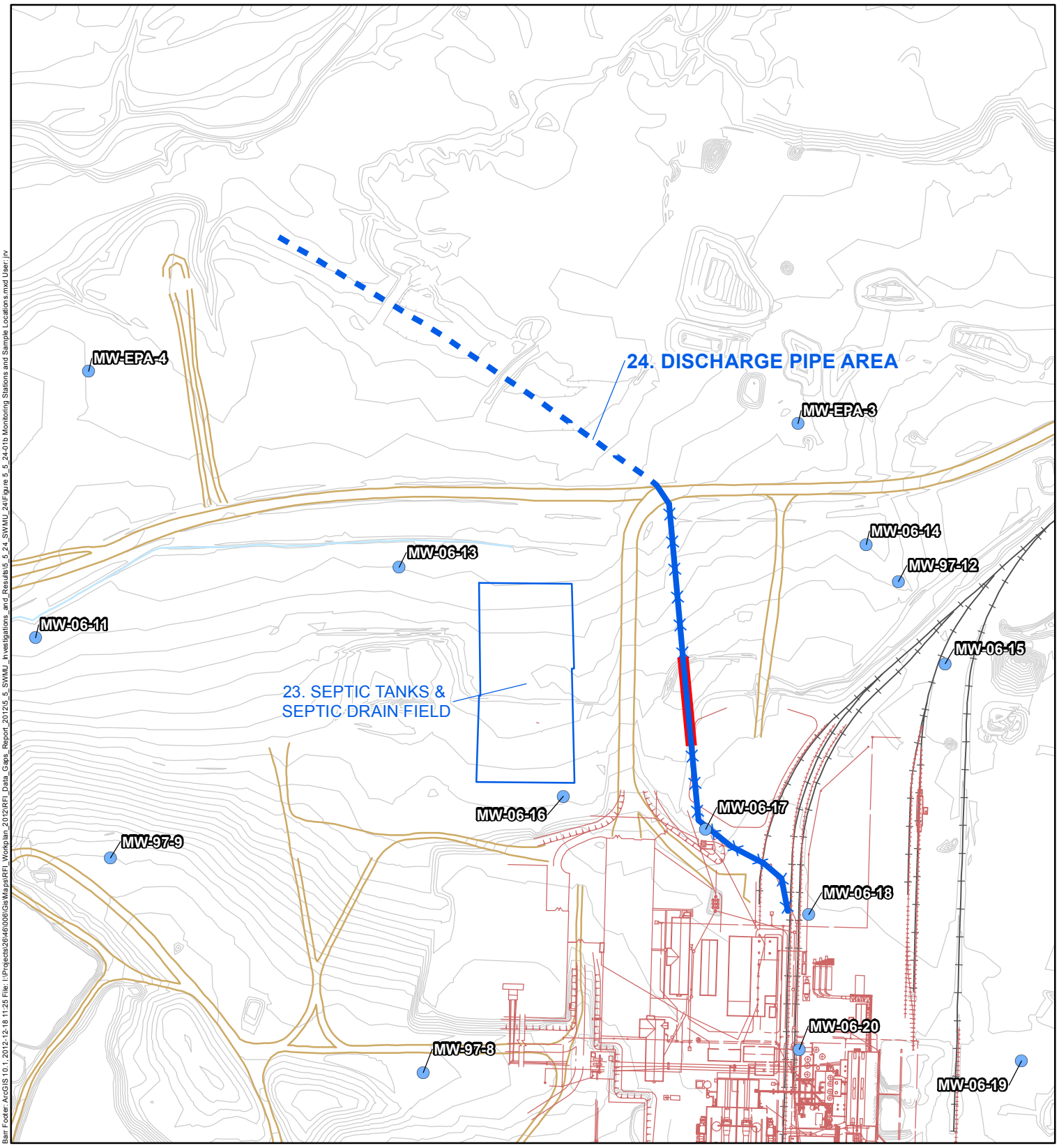
Bold font indicates that sample concentration is greater than the 95% UCL of mean Reference Area Concentration.

N

Feet
1,000 0 1,000

Figure 5.5.24-1a

SWMU 24 LOCATION
Rhodia Silver Bow Plant
Montana



Barr Footer: ArcGIS 10.1, 2012-12-18 11:25 File: I:\Projects\26\46\006\Gis\Maps\RFI_Workplan_2012\RFI_Data_Gaps_Report_2012\5_5_SWMU_Investigations_and_Results\5_5_24_SWMU_24\Figure 5_5_24-01b Monitoring Stations and Sample Locations.mxd User: jrv

Monitoring Well
Section removed in 2004
Section video logged
Section could not be video logged due to obstruction
SWMU 24
Other SWMUs
Elevation Contour
Drainage
Railroad
Road
Former Plant Structures

N

Feet
300 0 300

Bold font indicates that sample concentration is greater than the 95% UCL of mean Reference Area Concentration.

Figure 5.5.24-1b

SWMU 24
MONITORING STATIONS
AND SAMPLE LOCATIONS
Rhodia Silver Bow Plant
Montana

Appendices

Appendix 5.5.24-A

Final Report – Discharge Pipe Removal

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8, MONTANA OFFICE
FEDERAL BUILDING, 10 W. 15th STREET, SUITE 3200
HELENA, MONTANA 59626

Ref: 8MO

July 28, 2005

Mr. Dan Bersanti
Rhodia
Silver Bow Plant
P.O. Box 3146
Butte, MT 59702

Re: Silver Bow Creek Discharge Line Removal

Dear Dan:

Rhodia has submitted the Completion Report for the Removal of the Discharge Line to Silver Bow Creek and several additions to the Completion Report based on EPA comments on the original document. Please revise the Completion Report to include all of the additional information into the Report and submit it to the Agency for final approval.

Once the Agency has reviewed and approved the Completion Report, a letter will be submitted per Section XV.C of the AOC to Rhodia terminating the AOC.

If you have any questions, please contact me at (406) 782-7415.

Sincerely,

Sara Weinstock Sparks
Remedial Project Manager

cc: Charles Figur; 8ENF-L
Rebecca Holmes; MDEQ
Julie DalSolglio; 8MO

Silver Bow Plant
P.O. Box 3146
Butte, MT 59702
406-782-1215
406-782-4498 (FAX)

August 17, 2005

Sara Weinstock Sparks
Remedial Project Manager
United State Environmental Protection Agency
Region 8, Montana Office, Butte Office
Butte-Silver Bow County Courthouse
155 W. Granite
Butte, MT 59701

Re: Rhodia – Final Discharge Line Completion Report

Dear Sara:

As requested in your letter of July 28, 2005, attached please find the final Completion Report for the removal of the discharge line to Silver Bow Creek. This report contains all of the information submitted previously, as well as new information related to the additional pieces of discharge line removed in August.

Please contact me if you have questions or required additional information.

Sincerely,

Dan Bersanti

Updated Completion Report
For the
Removal of the
Discharge Line to Silver Bow Creek

August 19, 2005

Introduction:

Pursuant to Section 7003 of the Solid Waste Disposal Act, as amended, 42 U.S.C. § 6973, Rhodia Inc. ("Rhodia") entered into an Administrative Order on Consent ("AOC") with the United States Environmental Protection Agency ("EPA") Region VIII for removal and plugging of a discharge line ("Pipe") in the non-floodplain area between Rhodia's Silver Bow Plant ("Plant") and Silver Bow Creek. The AOC was filed with the Region 8 Hearing Clerk on May 19, 2004. Rhodia also entered into a Memorandum of Agreement ("MOA") dated January 12, 2004 with the Montana Department of Environmental Quality ("MDEQ") to remove the portion of Pipe located in the floodplain. The discharge pipe runs from the Plant northward under German Gulch Road and through property identified as Parcel 26 that is owned by Arco. Section 4.1 of the Work Plan, which is incorporated by reference into the AOC, requires Rhodia to submit a report explaining the details and confirming the completion of the work. This "Completion Report" is being submitted to satisfy that reporting requirement. Per the 7/28/05 request from Sara Sparks (EPA Remedial Project Manager), this Completion Report includes all of the information submitted to EPA in the original 8/3/04 Completion Report and all supplemental information submitted thereafter. All associated documents are attached.

Work Plan Activities:

The following tasks were completed in accordance with the approved Work Plan.

Exceptions to the Work Plan are noted below.

- Excavate soil covering the Pipe
    - The discharge pipe was exposed, using a trackhoe, in about 60 foot sections. The trackhoe operator removed the dirt from the top of the pipe and from one side of the pipe.
- Segregate soil visibly containing elemental phosphorus or phosphoric acid
    - No such soil was encountered.
- Place phosphorus material in drums

- Phosphorus material was not encountered on or in the pipe, but only from one manhole, as discussed below.

- Remove and transport the Pipe

  - Each section of pipe was removed from the excavation with the trackhoe and placed in the bucket of a front end loader. Any broken pieces of pipe were also removed from the excavation and placed in the bucket of the loader. Once the bucket of the loader was full, the operator transported the load to a designated location on the plant site. Measurements taken after the pipe was removed show that about 1,200 linear feet of pipe was removed from the non-floodplain and 90 linear feet of pipe was removed from the floodplain.

- Backfill the excavation and grade and re-seed the area

  - While loads of pipe were being transported to the plant site, the trackhoe operator backfilled the excavation and started compaction. Another operator then finished compaction. After all pipe was removed and the excavation was compacted, the excavation was leveled and seeded.

- Clean and plug the Pipe located under German Gulch Road

  - No pipe was found to contain phosphorus, however, one manhole did contain phosphorus in the bottom of the manhole. This manhole was partially broken as it was removed from the excavation. The area of the manhole that was broken did not allow phosphorus to spill out when the manhole was removed. The manhole that contained phosphorus was cleaned as described below. Measurements taken after the pipe was cleaned and plugged show that about 200 linear feet of pipe and manholes under German Gulch Road were cleaned with a high-pressure water spray and plugged.

- Clean all visible phosphorus material from the Pipe

  - None of the non-floodplain or floodplain pipe was found to have phosphorus material, so it was not cleaned except for removal of dirt. Phosphorus was only observed in 1 of the manholes. This manhole, as well as all of the other manholes, were cleaned using methods described in Attachment B of the Work Plan.(Work Plan Attached) Additional detail is below.

  - The bottom part of the manhole containing the small amount of phosphorus material was placed in a roll off container, as well as the rest of the pieces of the manhole that were broken off during handling, and the container was labeled "Hazardous Waste" and dated. The roll off container was transported to the plant site and stored near the cleaning pad. The bottom portion of the manhole that contained the

phosphorus material was removed from the roll off container and placed in a 8'x8'x2' metal pan sitting on the cleaning pad. The phosphorus material was manually removed from the bottom of the manhole, placed in three 30 gallon drums, the drums were filled with water, closed, labeled as hazardous waste, dated, and stored on the concrete pad next to the cleaning pad until shipment. The bottom portion of the manhole was then cleaned with 8000 psi. hot water. This cleaning resulted in removal of approximately ⅛" – ¼" of the manhole surface (determined by visual observation.) The cleaning water, phosphorus residue, concrete that was washed off of the manhole, and the water used to decontaminate the metal pan was then transferred to a 30 gallon drum, closed, labeled as a hazardous waste, and stored on the concrete pad next to the cleaning pad until shipment. The rest of the manhole pieces and material in the roll off container were visually again inspected for phosphorus contamination. No evidence of phosphorus was found in the manhole pieces. The manhole pieces were removed from the roll off and stored with the rest of the discharge pipe material on site.

- Place phosphorus material cleaned from the Pipe and manhole in drums
    - As noted, phosphorus material was placed in a total of three 30-gallon drums.
- Arrange for off-site transportation and disposal of clean Pipe into a Subtitle D landfill or on-site storage
    - All of the non-contaminated pipe and manholes, as well as the cleaned manhole, are currently being stored on-site.
- Arrange for off-site transportation and incineration of drums of phosphorus material
    - Onyx Environmental Services operates a permitted hazardous waste incinerator in Sauget, Illinois, which was used to incinerate the four drums of hazardous waste that were generated during this project. No pipe was sent off-site since none contained phosphorus material or any other hazardous waste. (See enclosed manifest)
    - Attached are Waste Stream Information Profiles that were submitted to Onyx Environmental in connection with disposal of the phosphorus-bearing wastes from the precipitator pans in November 2002. Because the phosphorus-bearing wastes and cleaning residue from the discharge pipe project had the same waste profile, these waste characterizations were used and referenced on the manifest in connection with the disposal of the hazardous waste for the discharge pipe project.
- Measure radiation levels of concrete

- HKM Engineering removed 2 core samples from the discharge pipe and 2 core samples from the manhole concrete. The samples were sent to Energy Laboratories for analysis. A copy of the Final Data Report is attached.

Exceptions:

1. Cleaning and plugging the Pipe under German Gulch Road

This activity was completed last, instead of after the first 60 foot section of Pipe was removed, as described in the Work Plan. The planned sequence was altered because there was a delay in locating the utilities, located in the area of the planned initial excavation, . While plugging the Pipe located under German Gulch Road, concrete was poured in the south manhole and allowed to flow to the north. Before any concrete was observed in the south manhole, the concrete stopped flowing. To ensure complete filling of the Pipe and manholes under the Road, concrete was then poured in the north manhole and allowed to flow to the south. This continued until the south manhole was completely filled. The north manhole was then filled with concrete.

2. Removing Additional pipe discovered in July 2005

While the contractor working for Montana DEQ was completing the clean-up of Silver Bow Creek under the SSTOU project, another portion of concrete discharge line was discovered near the creek bank. There was some phosphorus on the pipe and in the material surrounding the pipe. Because some of the pipe broke into pieces while it was being uncovered, all of this section of discharge line and the phosphorus was placed in drums and labeled as hazardous waste. Approximately forty (40) 30-gallon drums were filled with this newly-discovered discharge pipe waste, which contained a small amount of phosphorus commingled with tailings from Silver Bow Creek and slag. These drums were sent off-site for incineration in August 2005. A copy of the manifest is attached. The manifest shows a total of 98 drums of hazardous waste. About 40 of these were associated with the discharge pipe, and about 58 came from other SSTOU tailings that contained phosphorus which were collected during the SSTOU work.

Project Completion Schedule:

May 26, 2004 –	Project start date.
June 1, 2004 –	Pipe located in the flood plain of Silver Bow Creek was removed.
June 2, 2004 –	Completed Pipe removal.
June 3, 2004 –	Cleaned Pipe located under German Gulch Road and north and south manholes.

June 4, 2004 –	Filled Pipe located under German Gulch Road and manholes with concrete.
June 10, 2004 –	Completed cleaning manhole contaminated with phosphorus.
June 23, 2004 –	Completed re-vegetation.
June 24, 2004 –	Completed final project survey.
July 27, 2004 –	Shipped drums containing hazardous waste to the incinerator. This project generated (3) drums of contaminated dirt and water and (1) drum of contaminated water.
July, 2005-	Another section of discharge line was discovered during the clean-up of Silver Bow Creek.
August, 2005-	Drums of material removed from Silver Bow Creek SSTOU project and shipped off-site.

Termination of AOC:

Rhodia submits that the requirements of this AOC, excluding record retention, have been satisfactorily completed. Rhodia requests that EPA provide Rhodia with the written notice referenced in Section XV.C of the AOC so that the AOC will be terminated.

Discharge Line Removal
Work Plan

Rhodia Work Plan
For the
Plugging, Removal and Management of the Discharge Pipe

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List of Attachments

List of Figures

1.0 Introduction

This Work Plan is an Appendix to the Administrative Order on Consent between EPA, Region 8 and Rhodia Inc. under RCRA § 7003 regarding the concrete discharge pipe from Rhodia Inc.'s ("Rhodia") Silver Bow Plant, near Butte, Montana. The discharge pipe runs from the Plant northward under German Gulch Road and through property identified as Parcel 26 that is owned by Arco. Parcel 26 is located in Township 3 North, Range 9 West, Section 23, Silver Bow County, Montana. The southern boundary of Parcel 26 is approximately German Gulch Road; the northern boundary is approximately Silver Bow Creek; the eastern boundary is the east edge of Section 23; and the western boundary is the west edge of Section 23. The northern end of Parcel 26 is in the flood plain of Silver Bow Creek, but the remainder of Parcel 26 is not in the flood plain. Rhodia's Silver Bow Plant property and Parcel 26 are depicted on Figure 1.

Most of the discharge pipe (about 1500 linear feet) is located in the non-flood plain portion of Parcel 26, and will be referred to hereafter as the "Non-Flood Plain Pipe." Rhodia will remove this Non-Flood Plain Pipe. A small portion of the discharge pipe (about 80 linear feet) runs under German Gulch Road, and will be referred to hereafter as the "Road Pipe." This Road Pipe will be plugged with concrete and left in place. These removal and plugging operations are covered by this Work Plan. In addition, a small portion of the discharge pipe (about 50 linear feet) also extends into the flood plain of Parcel 26, and will be referred to hereafter as the "Flood Plain Pipe." This Flood Plain Pipe is not covered by the AOC or this Work Plan, but rather will be addressed by the work that the State and its contractor are conducting in the flood plain under Superfund authority. Figure 1 identifies the approximate location of all three segments of the discharge pipe. This Work Plan summarizes all proposed activities related to plugging the Road Pipe and removing, cleaning and disposing of the Non-Flood Plain Pipe.

1.1 Work Plan Activities

The following tasks are proposed.

- Excavate soil covering the Non-Flood Plain Pipe
- Segregate soil visibly containing elemental phosphorus or phosphoric acid
- Place phosphorus material in drums
- Remove and transport the Non-Flood Plain Pipe
- Clean and plug the Road Pipe
- Backfill the excavation and grade and re-seed the area

- Clean all visible phosphorus material from the Non-Flood Plain Pipe
- Place phosphorus material cleaned from the Non-Flood Plain Pipe in drums
- Arrange for off-site transportation and disposal of clean Non-Flood Plain Pipe into a Subtitle D landfill
- Arrange for off-site transportation and incineration of drums of phosphorus material

1.2 Work Plan Organization

This document provides the following information:

- **Section 2.0** Proposed Field Activities and Methods
- **Section 3.0** Schedule
- **Section 4.0** Reporting
- **Section 5.0** Modifications

2.0 Proposed Field Activities and Methods

2.1 Non-Flood Plain Pipe

This Section describes the anticipated work that will occur to excavate the Non-Flood Plain Pipe, clean it if necessary, and manage all residuals.

2.1.1 Site Preparation/Maintenance and Site Security

The following activities will be conducted prior to the onset of excavation activities:

1. Contractor will furnish and install erosion controls to prevent the erosion of soils and transport of silt, mud, and other debris away from the excavation area.
2. Project health and safety plan will be reviewed and updated by Contractor as necessary to include planned excavation activities.

The following activities will be conducted on an "as-needed" basis during soil excavation activities:

1. Contractor will provide measures necessary to control dust from the site. Water will be applied to the work and transportation areas to minimize the generation of dust from excavation, hauling of impacted soil, hauling clean soil, and backfilling the excavation area.
2. Every effort will be made to complete backfilling each day so the excavation is not left open. In the event this is not possible, all excavated areas left uncovered after normal working hours will be barricaded to prevent accidental access.

2.1.2 Excavation and Transport Equipment

It is anticipated that the contractor will use a track-mounted backhoe, or similar hydraulic equipment to remove the soil and the Non-Flood Plain Pipe. The bucket on the excavation equipment will be a toothless bucket or a toothed bucket with a plate welded over the teeth so that the teeth do not extend more than ½ inch beyond the plate. A small bulldozer or similar equipment and compaction equipment will be used to backfill the excavation.

2.1.3 Excavation/Backfilling Sequence

In general, the excavation will be completed from the south side of the excavation area (where the discharge line intersects German Gulch Road) to the north side (where the discharge line intersects

the south end of the flood plain of Silver Bow Creek). All work will be completed in approximately (60) foot sections. Each (60) foot section will be excavated, Non-Flood Plain Pipe removed, and the area backfilled before work on the next section is started. Final grading of the excavation will be completed from the south side to the north side.

The excavator will first remove the soil fill above the Non-Flood Plain Pipe and place it along the side of the excavated area. The exposed pipe will be removed, visually inspected and placed in a roll-off container.

The contractor will inspect the soil beneath the removed section of the Non-Flood Plain Pipe for any visible phosphorus material. Any phosphorus material found will be placed in (30) gallon drums, following the procedure detailed in Attachment A. Drums of phosphorus material will be marked as "Hazardous Waste." The date each drum is filled will be marked on each container, and this will be the "start-date" for its 90-day accumulation. At the end of each day, the drums will be transported to the Rhodia Plant and unloaded on the drum storage pad awaiting off-site transportation and incineration. The drums will be managed at the Plant according to the less-than 90-day generator rules at 40 CFR § 262.34.

After the Non-Flood Plain Pipe is removed, the trench will be filled with soil excavated from above the Pipe and compacted. Where additional fill is needed, clean granular borrow material will be used to backfill the excavated area. Borrow material will be free of debris, roots, or other vegetation, and free of material with dimensions larger than 3 inches. Imported backfill will be placed in lifts of approximately 12 inches and then compacted The surface of the clean backfill will be graded and re-seeded for erosion control.

2.1.4 Screening for Phosphorus Material

Solely for purposes of completing the work required under this AOC, for waste streams generated by removal of the Pipe, the parties agree that any material that is observed to ignite or smoke (dense white smoke), to contain a yellow or black waxy solid, or to contain a white granular solid will be considered to be phosphorus material, and will be considered to meet the ignitability characteristic at 40 C.F.R. §261.21 or the reactivity characteristic at 40 C.F.R. §261.23. The phosphorus material will be placed in (30) gallon drums. All other soil can be used to backfill the excavated area. Waste determination documents will be prepared and maintained pursuant to 40 CFR § 262.11 and § 262.40(c) for the phosphorus material and all other wastes.

2.1.5 Transportation of Pipe

Loads of pipe that have been visually inspected and determined not to contain phosphorus material, in accordance with the methods specified in Section 2.1.4, may be either reused, sent directly to a Subtitle D landfill for disposal, or transported to the Plant awaiting later transportation to the Subtitle D landfill, or disposal on-site, if EPA determines disposal on-site to be acceptable.

Pipe that has been determined to contain phosphorus material, or for which a determination has not yet been made, will be placed in roll-off containers. Each roll-off container of such Pipe will be marked as "Hazardous Waste," and the date when the first piece of pipe is placed in the roll-off will be the "start-date" for that container and all pipe therein for purposes of the 90-day accumulation period. The portion of the pipe that contains phosphorus material will be covered to prevent exposure to air while in the roll-off. After a roll-off is filled, it will be transported to the Plant for further observation, and as necessary, cleaning. Contractor shall use equipment designed to minimize the potential to spill material during transport. Trucks will follow the temporary construction road from the site to German Gulch Road. Trucks going to the Plant will exit German Gulch Road at the entrance to the plant and proceed to the Cleaning Pad. Once at the Plant, each truck will leave the roll-off near the Cleaning Pad described below. In the event phosphorus material is spilled in or on a roll-off, it will be decontaminated prior to leaving the Plant site. Decontamination will consist of brushing or washing the affected portion of the roll-off and collecting any phosphorus material and placing this material in a drum.

2.1.6 Cleaning of Pipe and Managing Residues

Pipe that contains phosphorus material will be cleaned in accordance with the procedures in Attachment B. The concrete Cleaning Pad is approximately 50' x 50' with an underlying leak collection system made of perforated pipe. Any leaks in the pad are directed to a standpipe, which can be monitored and pumped if needed. The Cleaning Pad consists of a drum storage area, staging area and cleaning area. The cleaning area includes an inclined pad designed to direct all excess cleaning water to the collection sump. The sump is covered with metal grating, with a sloped bottom, designed to collect all residue in the discharge end of the sump. The cleaning area will be surrounded on three sides by a barrier wall that is at least eight (8) feet high and made of metal, or some other non-flammable material. This walled cleaning pad will be considered acceptable by EPA even though it does not technically meet the definition of a tank, container, drip pad or containment building in 40 CFR § 262.34.

Each piece of Pipe and any other material or equipment requiring cleaning will be washed with hot water or a high-pressure washer. Spraying of the interior of the pipe will be done in a manner so that all water is directed downward through the pipe and onto the cleaning pad. The pipe will be treated to meet land disposal restriction standards at 40 CFR Part 268 in one of three ways:

(1) Meet the alternative treatment standard for debris at 40 CFR § 268.45, Table 1, Section A.1.e. This treatment standard involves the use of high pressure steam or water to achieve "a clean debris surface" and to remove at least 0.6 centimeters of the interior of the pipe.

If the alternative treatment standard for debris described above cannot be met, one of the following two standards will be met:

(2) The alternative debris standard involving water washing and spraying at 40 CFR § 268.45, Table 1, Section A.2.a. and a waiver will be obtained regarding the thickness limit based on an approval of an "equivalent technology" demonstration under 40 CFR § 268.42(b), or

(3) The normal LDR treatment standard for D001 ignitable (low TOC), which require deactivating the pipe by removing the phosphorus materials and meeting universal treatment standards for underlying hazardous constituents.

All residue will be either collected in a drum or washed to the collection sump, where the residue can be removed and placed in a drum. All removed phosphorus material will be drummed. The phosphorus material in the drums will be covered with water to prevent the phosphorus material from being exposed to air, following the procedure detailed in Attachment A. Each drum will be covered loosely to facilitate measurement of the pH each working day, and, as necessary, the addition of a buffer to adjust the pH. After the pH adjusts to a neutral range, the cover of each drum will be tightened. The drums will be marked as "Hazardous Waste." Each drum will bear the 90-day accumulation period "start-date" that corresponds to the date on the roll-off of excavated Pipe from which the phosphorus material came. In all other respects, the drums will be managed according to the standards for less-than 90-day generators at 40 CFR § 262.34.

2.1.7 Disposal

All Pipe that did not require cleaning and all cleaned Pipe that no longer contains phosphorus material will be disposed off-site as a non-hazardous waste, reused, or retained on-site for disposal if EPA determines on-site disposal to be acceptable. The level of naturally occurring radioactive material (NORM) for the Pipe will be determined using a Ludlum 19 meter in accordance with its

recommended sampling procedures. Prior to disposal or reuse of the Pipe, Rhodia will notify in writing any third-party receiver of any detected NORM level and provide a copy of such notice to EPA. Prior to disposal of Pipe, two core samples will be taken and analyzed for toxicity characteristic metals in accordance with the TCLP. If the toxicity characteristic levels are exceeded based on these samples and (any other confirmatory samples Rhodia elects to undertake), the Pipe will be managed in accordance with RCRA Subtitle C. All drums of phosphorus material will be manifested and sent off-site within 90 days as a Hazardous Waste for incineration and disposal and in accordance with the land disposal restriction requirements in 40 CFR Part 268. All drums of phosphorus material will be shipped from the Plant to the incineration facility in accordance with Department of Transportation hazardous materials regulations in 49 CFR Subchapter C.

2.1.8 Procedures for Material Containing Only Phosphoric Acid

If discrete volumes of soil or residue removed from the Pipe are observed to contain only phosphoric acid (white granular solid) and not elemental phosphorus (ignites, smokes or a yellow or black waxy solid), and if there are no free liquids, such material may be placed in drums and managed as a non-hazardous waste.

2.1.9 Procedures for Reused Pipe

Discharge pipe that is excavated and intact may be reused, provided the following procedures are followed. Pipe that has been visually inspected and determined not to contain phosphorus material in accordance with the methods specified in Section 2.1.4 may be reused as is. Pipe that has been visually inspected and determined to contain phosphorus material or for which a determination has not yet been made will be cleaned using the procedures set forth in Section 2.1.6 and Attachment B. Prior to cleaning, the pipe will be managed and transported as specified in Section 2.1.5. All phosphorus material that is removed from such pipe will be managed in the same manner as specified in Sections 2.1.6 and 2.1.7.

2.2 Road Pipe

This Section describes the anticipated work that will occur to excavate and plug the Road Pipe.

2.2.1 Excavation/Backfilling Sequence

This portion of the project will start after the first (60) foot section of Non-Flood Plain Pipe on the south end of the excavation has been removed, but before this section is backfilled. Working from

the manholes south and north of German Gulch Road, a high pressure water spray will be used to remove any phosphorus materials and sediment from the interior of the Road Pipe. phosphorus materials, if any, will be collected in the manholes, placed in drums, and managed as set forth in Section 2.1.3. After the cleaning is completed, concrete grout will be poured into the manhole directly south of German Gulch Road. The concrete grout will be allowed to flow down the pipe to the north until it is visible in the pipe on the north side of the road. At that time, a mechanical plug will be placed in the end of the pipe. Concrete grout will continue to be poured into the manhole until the line is full (approximately 25 cubic yards). When the plugging operation is complete, excavation will continue on the first section of Non-Flood Plain Pipe.

3.0 Schedule

3.1 Schedule for Pipe Plugging and Removal and Backfilling

The Road Pipe will be plugged, the Non-Flood Plain Pipe will be removed, and the excavation area will be filled and graded no later than October 30, 2004.

3.2 Schedule for Cleaning and Removal of Residuals

Within 90 days from the excavation of a piece of the Non-Flood Plain Pipe, the section of Pipe will be cleaned as necessary, and all drums of phosphorus material associated with that section of Pipe will be transported off-site for incineration.

4.0 Reporting

4.1 Completion Report

Within 30 days of completion of all work specified in the Work Plan, Rhodia shall provide EPA and MDEQ with a written report explaining the details and confirming the completion of the work pursuant to this Work Plan. For all reused pipe, the report will also specify how, where and by whom any pipe that is cleaned under Section 2.1.6 will be reused.

5.0 Modifications

Any procedure herein may be modified if agreed to by Rhodia and US EPA Region 8. In the event of an emergency situation where obtaining prior agreement to modify this Work Plan is not feasible, Rhodia may alter procedures specified herein in a manner that will prevent or mitigate harm or the threat of harm to the workers, other humans and/or the environment. In such event, the changed procedures shall be reported as promptly as possible to US EPA Region 8. Any modification will involve notification and consultation with MDEQ.

Attachment A

Procedure – Drumming Phosphorus Material

ATTACHMENT A

Suggested Procedures For
Drumming Phosphorus Material

Date: 5/11/04

JOB: In conjunction with excavation of the Non-Flood Plain Pipe, Contractor to drum soil containing elemental phosphorus or phosphoric acid and transport drums to the Silver Bow Plant cleaning pad for accumulation.

SUGGESTED PROTECTIVE EQUIPMENT: Standard site safety equipment required for Superfund remedial work, portable safety shower and cold water hose, rubber rainsuit, rubber boots, phosphine monitor.

PERSONNEL ROLES: Contractor to complete all work. Rhodia to provide technical advice to the Contractor when requested.

SUGGESTED FIRST AID: If elemental phosphorus or phosphoric acid, or material containing such, contacts your skin or clothing, immediately flush with water. In the event of a burn, wash the area with large amounts of water and seek medical attention.

JOB STEPS	HOW	KEY POINTS
1. Contractor to determine through visual inspection if the soil underlying the removed Non-Flood Plain Pipe contains elemental phosphorus or phosphoric acid (phosphorus material).	A. Visually inspect the soil during the excavation for any signs of phosphorus material	A. Elemental phosphorus is a yellow or black waxy solid. Elemental phosphorus exposed to air may ignite or smoke. B. Smoke emitted when elemental phosphorus burns is a dense white smoke that is irritating to the respiratory tract. C. Phosphoric acid will be a white, granular solid. Contact may cause skin irritation.
2. Contractor to remove any phosphorus material from the excavated area and place in (30) gallon drums.	A. Use a shovel or a small trackhoe to remove the phosphorus material from the excavation area. B. Physically place this phosphorus material in a (30) gallon drum containing about 5 gallons of water. C. Continue adding material to the drum, maintaining at least a 6" water cover over the	A. Any phosphorus material must be handled in such a manner that it is not exposed to the air. If elemental phosphorus is exposed to air and ignites, immediately extinguish with water or cover with clean dirt, tailings or slag. B. Have a 1 ½" water hose connected to the fire protection system available at the excavation site.

Suggested Procedures For
Drumming Phosphorus Material

	material in the drum and about 2" of free space in the top of the drum. D. Cover each drum loosely with a lid until just prior to their transportation. E. Mark on each drum "Hazardous Waste" and the date on which the drum is filled.	C. Check the working area for phosphine using the phosphine monitor. If phosphine is above the NIOSH standard of 1.0 ppm (15-min. STEL) or the OSHA PEL of 0.3 ppm (8-hr. TWA), evacuate workers to an upwind location, and do not resume work until the phosphine levels decrease to below both of these standards. D. Connect the portable safety shower to the water supply. Test the shower to insure it is functioning properly each day prior to working in this area. E. Always handle the equipment in such a manner to prevent any phosphorus material from contacting you. F. On a daily basis, clean the area and equipment of all phosphorus material before leaving the job site.
3. Contractor to determine through visual inspection whether the material removed from the interior of the Road Pipe contains elemental phosphorus or phosphoric acid.	Follow same procedures as for Job Step #1.	Follow same procedures as for Job Step #1.
4. Contractor to remove all phosphorus material collected in the manholes north and south of the Road Pipe and place in (30) gallon drums.	Remove phosphorus material from manholes with a shovel or pump, and follow same procedures B through E as for Job Step #2.	Follow same procedures as for Job Step #2.
5. Contractor to clean all equipment and tools used to drum any phosphorus material.	A. Wash each piece of equipment and all tools with water. B. Collect any remaining residue that contains phosphorus material and place in a (30) gallon drum, following the procedure in #2 above.	A. Daily, clean all equipment, tools and personal protective equipment used in the handling of phosphorus material by washing with water. Put all residue in a drum. B. Use water, clean dirt, or slag to extinguish any fires that occur.

6. Contractor to transport drums to Rhodia's Silver Bow Plant and unload and place them on the Cleaning Pad.	A. By the end of each workday, all drums containing phosphorus material should be removed from the excavation area and placed on the drum storage area of the Cleaning Pad at the Rhodia plant.	A. Secure lid on each drum, tighten lid bolts, and place drums in the transport vehicle such that they will not spill during transport. B. Notify Rhodia personnel of the shipment so that plant access can be arranged. C. When placing drums on the Cleaning Pad, position them so their markings ("Hazardous Waste" and date of filling) are visible and there is sufficient aisle space to allow unobstructed movement of personnel and equipment. D. After placing drums on the Cleaning Pad at Rhodia's plant, unsecure and loosen the lid until advised by Rhodia personnel that the pH has adjusted. If contents of drum are causing the drum to bulge, notify Rhodia personnel. Contractor will add neutralizing agents to the drums, if necessary. E. If neutralizing agents are added, check the working area for phosphine using the phosphine monitor. If phosphine is above the NIOSH standard of 1.0 ppm (15-min. STEL) or the OSHA PEL of 0.3 ppm (8-hr. TWA), evacuate workers to an upwind location, and do not resume work until the phosphine levels decrease to below both of these standards.

7. If discrete volumes of soil or sediment are observed to contain only phosphoric acid and not elemental phosphorus, Contractor to place such material in drums and segregate such drums on the drum storage area from those marked "Hazardous Waste."	A. Visually inspect the soil and sediment and confirm that if it contains only a white, granular solid. If soil is observed to also contain phosphorus material, manage material as specified in Job Steps 1-4.	A. Rhodia will arrange for disposal of drums as nonhazardous waste.

Attachment B

Procedure – Cleaning Non-Flood Plain Pipe

Suggested Procedures For
Cleaning Non-Flood Plain Pipe

Date: 5/11/04

JOB: Contractor to clean Non-Flood Plain Pipe, prepare the Pipe for disposal or re-use, and drum residues from cleaning.

SUGGESTED PROTECTIVE EQUIPMENT: Standard site safety equipment required for Superfund remedial work, portable safety shower and cold water hose, rubber rainsuit, rubber boots, phosphine monitor.

PERSONNEL ROLES: Contractor to complete all work. Rhodia plant personnel to provide technical advice when requested.

SUGGESTED FIRST AID: If elemental phosphorus or phosphoric acid, or material containing such, contacts your skin or clothing, immediately flush with water. In the event of a burn, wash the area with large amounts of water and seek medical attention.

JOB STEPS	HOW	KEY POINTS
1. Determine if Non-Flood Plain Pipe that has been placed on the cleaning pad storage area contains elemental phosphorus or phosphoric acid (phosphorus material).	A. Visually inspect the exterior and interior surfaces and particularly the joints of each piece of concrete Pipe for any signs of phosphorus material	A. Elemental phosphorus is a yellow or black waxy solid. Elemental phosphorus exposed to air may ignite or smoke. B. Smoke emitted when elemental phosphorus burns is a dense white smoke that is irritating to the respiratory tract. C. Phosphoric acid will be in a white, granular solid. Contact may cause skin irritation. D. Any phosphorus material must be handled in such a manner so that the elemental phosphorus is not exposed to air. If exposure occurs and material ignites, immediately extinguish with water or slag.
2. Segregate sections of Pipe determined not to contain phosphorus material.	A. Place Pipe determined not to contain phosphorus material in an area that will not be impacted by the cleaning operation.	A. Rhodia will arrange for off-site disposal or re-use.
3. Place sections of Pipe that have been	A. Use a small trackhoe or mobile crane to move	A. Have a 1 ½" water hose connected to the fire

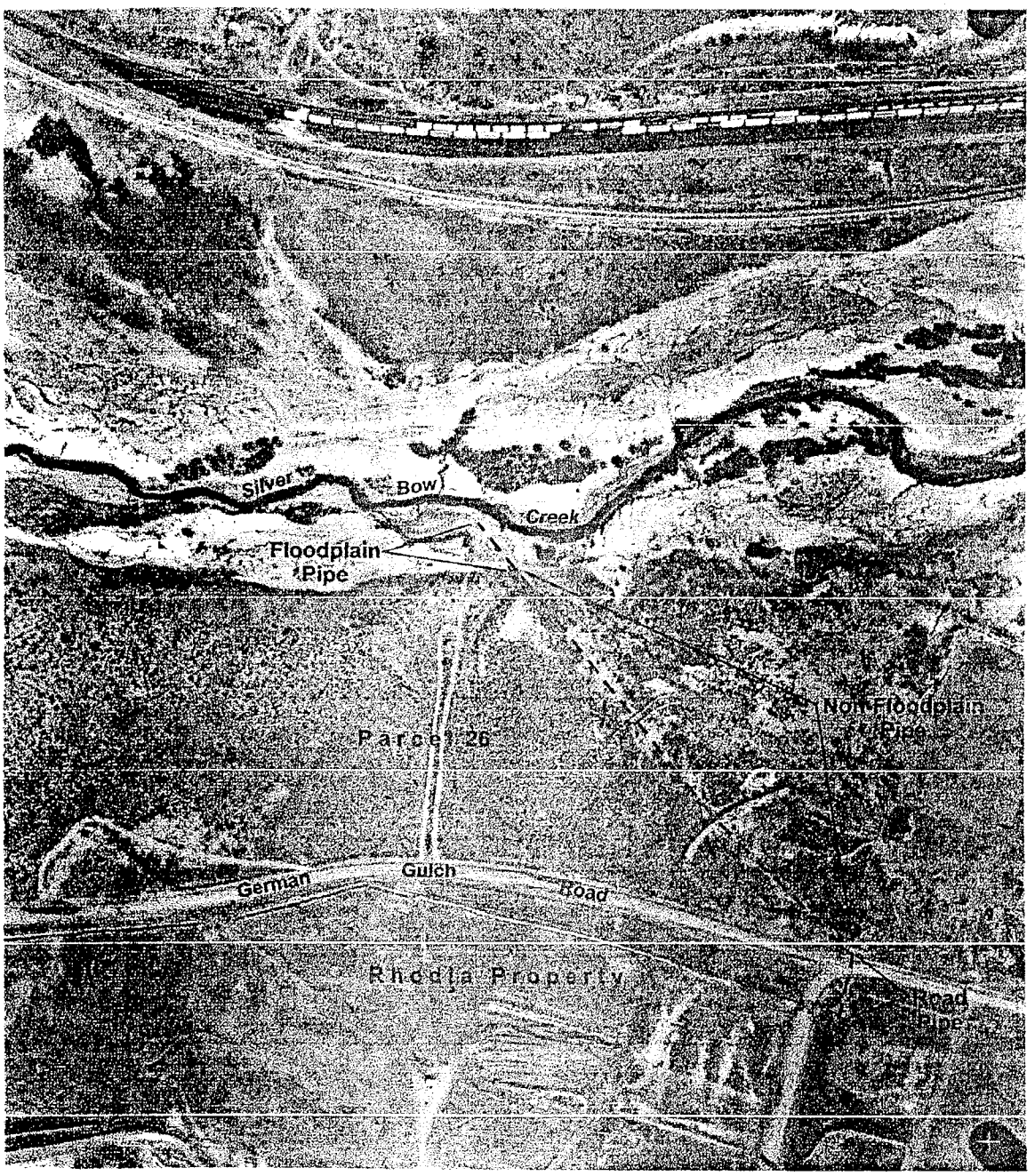
determined to contain phosphorus material (or Pipe for which a determination has not yet been made) on the Cleaning Pad.	the Pipe into position.	protection system available at the cleaning pad. B. Check the working area for phosphine using the phosphine monitor. If phosphine is above the NIOSH standard of 1.0 ppm (15-min. STEL) or the OSHA PEL of 0.3 ppm (8-hr. TWA), evacuate workers to an upwind location, and do not resume work until the phosphine levels decrease to below both of these standards. C. Connect the portable safety shower to the water supply. Test the shower to insure it is functioning properly each day prior to working in this area. D. If machinery is used, the daily equipment safety checklist must be completed everyday. E. Always handle the Pipe in such a manner as to prevent any phosphorus material from getting on you or the equipment.
4. Clean each piece of Pipe to remove the phosphorus material	A. As necessary, spray wash both the inside and outside of the Pipe with hot water. B. Position the pipe so that water used to spray the interior of the pipe will flow downward toward the cleaning pad. With the pressure washer operating between 5000 p.s.i.g. and 10,000 p.s.i.g., pull a two-dimensional rotating cleaning head assembly through the full length of the inside of the pipe. C. Remove a minimum of .6 cm of concrete from the inside diameter of the pipe. D. Continue cleaning until the surface of the pipe where there was hazardous waste or contaminated soil is a "clean debris surface," which means "the surface, when viewed without	A. Drum the removed residue and manage the filled drums in accordance with the procedures in Attachment A. B. Check the working area for phosphine using the phosphine monitor. If phosphine is above the NIOSH standard of 1.0 ppm (15-min. STEL) or the OSHA PEL of 0.3 ppm (8-hr. TWA), evacuate workers to an upwind location, and do not resume work until the phosphine levels decrease to below both of these standards. C. Maintain at least 6 inches of water in the sump above any collected solids. D. Daily, decontaminate all equipment, tools and personal protective equipment that came in contact with phosphorus material by washing

	magnification, shall be free of all visible contaminated soil and hazardous waste except that residual staining from soil and waste consisting of light shadows, slight streaks, or minor discolorations, and soil and waste in cracks, crevices, and pits may be present provided that such staining and waste and soil in cracks, crevices, and pits shall be limited to no more than 5% of each square inch of surface area." Advise Rhodia personnel if this "clean debris surface" standard is not being achieved. E. Collect all residue in a drum or wash it into the sump on the cleaning pad.	with water on the cleaning pad. Put all residue in a drum or wash into the sump of the cleaning pad. E. Use water to extinguish any fires that occur.
5. Drum residue from sump and place all drums of residue on designated area on cleaning pad.	A. Remove all residue, including water from the sump and place in 30 gallon drums in accordance with the procedures in Attachment A. B. Close and mark all drums as specified in Attachment A. C. Move all drums to the Rhodia-designated accumulation area on the cleaning pad. D. Position drums so that their markings ("Hazardous Waste" and their date of filling) are visible and there is sufficient aisle space to allow unobstructed movement of personnel and equipment. E. Notify Rhodia of any bulging drums, and add neutralizing agents, if necessary.	A. Have a 1 ½" water hose connected to the fire protection system available at the cleaning pad. B. Check the working area for phosphine using the phosphine monitor. If phosphine is above the NIOSH standard of 1.0 ppm (15-min. STEL) or the OSHA PEL of 0.3 ppm (8-hr. TWA), evacuate workers to an upwind location, and do not resume work until the phosphine levels decrease to below both of these standards. C. Maintain at least 6 inches of water in the sump above any collected solids. D. Daily, decontaminate all equipment, tools and personal protective equipment that came in contact with phosphorus material by washing with water on the cleaning pad. Put all residue in a drum or wash into the sump of the cleaning pad.
6. If discrete volumes of residue from the Pipe are observed to contain only phosphoric acid and not elemental phosphorus, Contractor to	A. Visually inspect the residue from the Pipe. If it contains only a white, granular solid, the residue should be placed in drums that do not contain	A. Rhodia will arrange for disposal of drums of phosphoric acid solids as nonhazardous waste.

	place such material in drums and segregate such drums on the drum storage area from those marked "Hazardous Waste."	elemental phosphorus or water. If Pipe residue is observed to contain phosphorus material, manage material as specified in Job Step 5.	
7.	Segregate cleaned Pipe.	A. After cleaning, place all cleaned Pipe in an area that will not be impacted by the cleaning operation.	A. Rhodia will arrange for disposal or reuse of the pieces of pipe.

Figure 1

Property Location and Discharge Pipe Location



N

0 400 800

Approximate Scale in Feet

Figure 1

PROPERTY LOCATION AND
DISCHARGE PIPE LOCATION

P:\26\26100\1\PROPLOCATIONDISCHARGEPIPE.CDR RLG 02-27-03

Manifest and Waste Stream Information Profiles 2004 Waste Shipments

STATE OF ILLINOIS

P.O. BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

State Form LPC 62 8/81 IL532-0610

FOR SHIPMENT OF HAZARDOUS AND SPECIAL WASTE

21

PLEASE TYPE (Form designed for use on elite (12-pitch) typewriter.)

EPA Form 8700-22 (Rev. 6-89)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MTD057558546 Manifest Document No.: 04028

2. Page 1 of 1 — Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address
RHODIA INC
119130 GERMAN GULCH RD
SILVER BOW, MT 59750-9702

Location If Different: SAME

A. Illinois Manifest Document Number: IL10773035 FEE PAID IF APPLICABLE

B. Generator's IL ID Number: 3 3 0 0 0 1 8 8 8 8

4. *24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS* 1-800 535-5053

C. Transporter's ID Number: UPW-285929 NJ 8/04

5. Transporter 1 Company Name: TRIAD TRANSPORT, INC.

6. US EPA ID Number: OKD981588791

D. Transporter's Phone: 800 324-1139

7. Transporter 2 Company Name

8. US EPA ID Number

E. Transporter's ID Number

F. Transporter's Phone ( )

9. Designated Facility Name and Site Address
ONYX ENVIRONMENTAL SVCS, L.L.C.
7 MOBILE AVENUE
SAUGET, IL 62201-1009

10. US EPA ID Number: ILD098642424

G. Facility's IL ID Number: 1 6 3 1 2 1 0 0 9

H. Facility's Phone (618 271-2804

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ, WASTE PHOSPHORUS, WHITE, UNDER WATER, 4.2, UN1381, I, POISON, (RQ=D001, D003), DOT-E 13552	005	DM	02250	P	EPA HW Number D001 / D003
b. RQ, WASTE PHOSPHORUS, WHITE, UNDER WATER, 4.2, UN1381, I, POISON, (RQ=D001, D003), DOT-E 13552	001	DM	00450	P	EPA HW Number D001 / D003
c. RQ, WASTE PHOSPHORUS, WHITE, UNDER WATER, 4.2, UN1381, I, POISON, (RQ=D001, D003), DOT-E 13552	012	DM	05400	P	EPA HW Number D001 / D003
d. RQ, WASTE PHOSPHORUS, WHITE, UNDER WATER, 4.2, UN1381, I, POISON, (RQ=D001, D003), DOT-E 13552	003	DM	01350	P	EPA HW Number D001 / D003

J. Additional Description for Materials Listed Above
A) SM 585825
B) SM 585812
C) SM 585814
D) SM 585844

K. Handling Codes for Wastes Listed Above In Item #14

15. Special Handling Instructions and Additional Information
- EMERGENCY NUMBER-INFOTRAC: 1-800-535-5053
ONYX PO# 401010

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; **OR,** if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

GENERATOR

Printed /Typed Name: Floyd C Balentine — Signature: Floyd Cam Balentine — Date (Month Day Year): 07 27 04

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed /Typed Name: PAUL STEELY — Signature: Paul Steely — Date (Month Day Year): 07 27 04

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed /Typed Name — Signature — Date (Month Day Year)

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed /Typed Name: Kathy DeWitt — Signature: Kathy DeWitt — Date (Month Day Year): 07 30 04

This Agency is authorized to require, pursuant to Illinois Revised Statute, 1989, Chapter 111 1/2, Section 1004 and 1021, that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator not to exceed $25,000 per day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

A25-8820 C25-881

B25-8818 D25-885

COPY 1. TSD MAIL TO GENERATOR

ONYX ENVIRONMENTAL SERVICES, L.L.C.

ONYX

WASTESTREAM INFORMATION PROFILE

☐ Recertification
ONYX LOCATION 121000 Browns Gulch Rd ADDRESS Butte CITY MT ST
☐ Invoice Address
☐ Manifest from – blank if direct

Disposal Code

ONYX TSDF requested TWI Technology requested Incin Generator No. 425768 Generator EPA ID No. MTR057558546

1. Generator Name Rhodia Generator State No.
Address 119130 German Gulch Rd State Wastestream No.
City Butte State MT Country ZIP 59750
NAICS (SIC) Code 3999 Source Origin Form System Type

2. Waste Name phosphorus cont. dust, concrete, dirt Lab or Waste Area
3. Process Generating Waste
4. Shipping Name phosphorus in soln
Hazard Class 4.2 (UN)/NA No. 1381 PG I RQ amt lb

RQ Desc: 1. 2.
DOT Desc: 1. 2.

5 Waste Codes: D001 D003
Wastewater Non Wastewater Sub Category

(check all that apply)

6. Physical and chemical properties

pH
a ___ < 2
b ___ 2 - 5
c ___ 5 - 9
d ___ 9 - 12.5
e ___ > 12.5
___ exact

Specific Gravity
a ___ < .8
b ___ .8 - 1.0
c ___ 1.0
d ___ 1.0 - 1.2
e ___ > 1.2
___ exact

Flash Point (F)
a ___ < 80
b ___ 80 - 100
c ___ 101 - 140
d ___ 141 - 200
e ___ > 200
f ___ no flash ___ exact

Solids
___ % suspended
___ % settleable
___ % dissolved
___ % ash
___ water solubility
___ BTU/lb

Free Liquid Range 5 % to 15 %

Physical State
s X solid
m ___ semi-solid
l X liquid
p ___ pumpable semi-solid
t ___ flowable powder
g ___ gas
a ___ aerosol
r ___ pressurized liquid
d ___ debris per 40 CFR 268.45
h ___ sharps

Hazardous Characteristics
a ___ air reactive
w ___ water reactive
c ___ cyanide reactive
f ___ sulfide reactive
e ___ explosive
o ___ oxidizing acid
p ___ peroxide former
r ___ radioactive or NRC regulated
s ___ shock sensitive
t ___ temperature sensitive
m ___ polymerization/monomer
n ___ OSHA carcinogen
i ___ infectious
h ___ inhalation hazard
Zone: A, B, C, D

Odor:
a none
b mild
c strong
describe

Halogens
Br ___ % Bromine
Cl ___ % Chlorine
F ___ % Fluorine
I ___ % Iodine

Layers: a ___ multilayered: b X bi-layered: c ___ single phase:

Viscosity by Layer	Top Layer	Second Layer	Bottom Layer
	___ high (syrup)	___ high (syrup)	___ high (syrup)
	___ medium (oil)	___ medium (oil)	___ medium (oil)
	X low (water)	___ low (water)	___ low (water)
	___ solid	X solid	___ solid

Color
___
___
___

Used oil y/n ___ HOC<1000 ppm ___ or > 1000 ppm ___

WIP NO. 585844

7. **Chemical Composition** (M = Marine Pollutant, S = Severe Marine Pollutant, O = Ozone Depleting Substance, U = Underlying Hazardous Constituent, B = Benzene NESHAP, T = TRI Chemical, C = OSHA Carcinogen)

Constituents	Range	Units		Constituents	Range	Units
phosphorus (white)	0-2	%				
precipitator dust	0-95	%				
granulated slag	0-10	%				
concrete debris	0-95	%				
solid material / dirt	0-95	%				
water	5-15	%				

Total Composition Must Equal or Exceed 100%

Other:

8. Is the wastestream being imported into the USA? Yes ____ No ✓
9. Does the wastestream contain PCBs regulated by 40 CFR? Yes ____ No ✓
   PCB concentration ____ ppm
10. Is the wastestream subject to the Marine Pollutant Regulations? Yes ____ No ✓
11. Is the wastestream subject to Benzene NESHAP? Yes ____ No ✓
    If yes, is the wastestream subject to Notification and Control Requirements? Yes ____ No ✓
    Benzene concentration ____ ppm
12. Is the wastestream subject to RCRA subpart CC controls? Yes ____ No ✓
    Volatile organic concentration, if known ____ ppmw
    CC approved analytical method ____ Generator Knowledge ____
13. Is the wastestream from a CERCLA or state mandated cleanup? Yes ____ No ✓

14. **Container Information** (Identify UN container marking if known)

Packaging: Bulk Solid ____ Type/Size: ____ Bulk Liquid ____ Type/Size: ____ Drum X Type/Size: 30gl

Other ____

Shipping Frequency: Units ____ Per Month ____ Quarter ____ Year ____ One Time X Other ____

15. **Additional Information:**

Is analytical or an MSDS available that describes the waste? Yes ____ No ____ If yes, please attach.

GENERATOR CERTIFICATION

I hereby certify that all information submitted in this and all attached documents contains true and accurate descriptions of this waste. Any sample submitted is representative as defined in 40 CFR 261 - Appendix I or by using an equivalent method. All relevant information regarding known or suspected hazards in the possession of the generator has been disclosed. I authorize sampling of any waste shipment for purposes of recertification.

Floyd C Balentine — NAME (PRINT OR TYPE)

406-496-2221 — PHONE

8/26/02 — DATE

Floyd C Balentine — SIGNATURE

HS&E Manager — TITLE

FACILITY NOTIFICATION

If approved for management, *ONYX* has all the necessary permits and licenses for the waste that has been characterized and identified by this profile.

TSDF PROCESSING USE ONLY: PPE REQUIRED No ____ Yes ____ Describe ____

WIP NO. 585844

Manifest and Waste Stream Information Profiles 2005 Shipments

STATE OF ILLINOIS

P.O. BOX 19276 SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

State Form LPC 62 8/81 IL532-0610

FOR SHIPMENT OF HAZARDOUS AND SPECIAL WASTE

PLEASE TYPE (Form designed for use on elite (12-pitch) typewriter.) EPA Form 8700-22 (Rev. 6-89) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MTD057558546 Manifest Document No. 05029

2. Page 1 of

Information in the shaded areas is not required by Federal law, but is required by Illinois law.

3. Generator's Name and Mailing Address
RHODIA INC
PO BOX 3146
ATTN: CAM BALENTINE
BUTTE MT 59702

Location If Different
119130 GERMAN GULCH RD
SILVER BOW, MT 59750-9702

4. *24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS* 1-800 535-5053

A. Illinois Manifest Document Number IL10677357 FEE PAID IF APPLICABLE

B. Generator's IL ID Number

5. Transporter 1 Company Name: TRIAD TRANSPORT INC

6. US EPA ID Number: OKD981588791

C. Transporter's ID Number N/A

D. Transporter's Phone (800)324-1139

7. Transporter 2 Company Name

8. US EPA ID Number

E. Transporter's ID Number

F. Transporter's Phone ( )

9. Designated Facility Name and Site Address
ONYX ENVIRONMENTAL SVCS,L.L.C.
7 MOBILE AVENUE
SAUGET IL 62201-1069

10. US EPA ID Number: ILD098642424

G. Facility's IL ID Number N / A

H. Facility's Phone (618)271-2804

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ, WASTE PHOSPHORUS, WHITE, UNDER WATER, 4.2 (6.1), UN1381, I, POISON, (RQ=D001, D003)	078	DM	49100	P	EPA HW Number D001 D003
b.					EPA HW Number
c.					EPA HW Number
d.					EPA HW Number

J. Additional Description for Materials Listed Above
A) SA 594500 PHOSPHORUS CONT.
CONCRETE, DIRT W/METALS

K. Handling Codes for Wastes Listed Above In Item #14

15. Special Handling Instructions and Additional Information
EMERGENCY NUMBER INFOTRAC 1-800-535-5053

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed /Typed Name	Signature	Date Month Day Year
N/A Floyd Cam Balentine	Floyd Cam Balentine	08 10 05

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed /Typed Name	Signature	Date Month Day Year
PAUL STEELY	Paul Steely	08 10 05

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed /Typed Name	Signature	Date Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed /Typed Name	Signature	Date Month Day Year

GENERATOR / TRANSPORTER / FACILITY

This Agency is authorized to require, pursuant to Illinois Revised Statute, 1989, Chapter 111 1/2, Section 1004 and 1021, that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator not to exceed $25,000 per day of violation. Falsification of this information may result in a fine up to $50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

COPY 6. GENERATOR'S COPY

ONYX ENVIRONMENTAL SERVICES L.L.C.

WASTESTREAM INFORMATION PROFILE

Disposal Code

|__| Recertification

ONYX Location N. SALT LAKE, UT (OFFICE) N. SALT LAKE (CITY) UT (ST) |552 | 686 |

|__| Invoice Address

ONYX TSDF requested _____ Technology requested _____ Generator No. 425768 Generator EPA ID No. MTD057558546

1. Generator Name RHODIA INC Generator State No. _____
   Address 119130 GERMAN GULCH RD State Wastestream No. _____
   City SILVER BOW State MT Country US ZIP 59750 9702
   NAICS(SIC) Code 3999 _____ _____ _____ Source G09 Origin 1 Form 8696 System Type _____

2. Waste Name PHOSPHORUS CONT. CONCRETE, DIRT W/METALS Lab or Waste Area _____

3. Process Generating Waste
   SITE CLEANOUT

4. Shipping Name WASTE PHOSPHORUS, WHITE, UNDER WATER
   Hazard Class 4.2 UN/NA No. UN1381 PG I SH (6.1) RQ amt 100 lb Waste: Y PIH: N IH: N DMW: N P: Y

RQ Des: 1. RQ-D001, D003 2. _____

DOT Des: 1. _____ 2. _____

5. Waste Codes D001 D003 D004 D008 D009 _____ _____ _____ _____ _____ _____ _____ _____ _____ _____
   Wastewater _____ Non Wastewater X Sub Category NR Mix: N Sol: N

6. Physical and chemical properties:

pH
- a ___ < 2
- b ___ 2 - 5
- c X 5 - 9
- d ___ 9 - 12.5
- e ___ > 12.5
- ___ - ___ exact

Specific Gravity
- a ___ <.8
- b ___ .8 - 1.0
- c ___ 1.0
- d X 1.0 - 1.2
- e ___ > 1.2
- ___ - ___ exact

Flash Point(F)
- a ___ < 80
- b ___ 80 - 100
- c ___ 100 - 140
- d ___ 140 - 200
- e ___ > 200
- f X no flash ___ - ___ exact

Solids
- 0 - 0% suspended
- 0 - 0% settleable
- 0 - 0% dissolved
- 0 - 0 % ash
- 0 - 0 % water solubili
- 0 - 0 BTU/lb
- Free Liquid Range 5 to 15 %

Physical State
- s X solid
- m ___ semi-solid
- l ___ liquid
- p ___ pumpable semi-solid
- f ___ flowable powder
- g ___ gas
- a ___ aerosol
- r ___ pressurized liquid
- d ___ debris per 40 CFR 268.45
- h ___ sharps

Hazardous Characteristics
- a ___ air reactive
- w ___ water reactive
- c ___ cyanide reactive
- f ___ sulfide reactive
- e ___ explosive
- o ___ oxidizing acid
- p ___ peroxide former
- r ___ radioactive or NRC regulated
- s ___ shock sensitive
- t ___ temp sensitive
- m ___ polymerization/monomer
- n ___ OSHA carcinogen
- i ___ infectious
- h ___ inhalation hazard

Zone: _

Odor
- a none ____
- b mild ____
- c strong ____
- describe _____

Halogens
- Br 0 - 0 % Bromine
- Cl 0 - 0 % Chlorine
- F 0 - 0 % Fluorine
- I 0 - 0 % Iodine

Layers: | a ___ multilayered: b X bi-layered: c ___ single phase |

Viscosity by Layer:	Top Layer	Second Layer	Bottom Layer	Color
	___ high(syrup)	___ high(syrup)	___ high(syrup)	VAR
	___ medium(oil)	___ medium(oil)	___ medium(oil)	___
	X low(water)	___ low(water)	___ low(water)	_____
	___ solid	X solid	___ solid	

Used oil y/n ___ HOC < 1000 ppm ___ HOC > 1000 ppm ___ page 1 WIP NO. 594500

Chemical Composition [M=Marine Pollutant, S=Severe Marine Pollutant, O=Ozone Depleting Substance, U=Underlying Hazardous Constituent, B=Benzene NESHAP, T=TRI Chemical, C=OSHA Carcinogen]

	Constituents	Ranges		Units
T.U.	ARSENIC (ANALYSIS-TOTALS, NOT TCLP)	.00	2820.00	MI
T.U.	LEAD (ANALYSIS IS TOTALS, NOT TCLP)	.00	21000.00	MI
T.U.	MERCURY (ANALYSIS IS TOTALS, NOT TCLP)	.00	150.00	MI
S.T.	PHOSPHORUS WHITE, DRY OR IN WATER	.00	2.00	%
S.T.U.	CADMIUM (ANALYSIS IS TOTAL, NOT TCLP)	.00	102.00	MI
	WATER	5.00	15.00	%
	CONCRETE DEBRIS	.00	30.00	%
	SOLID MATERIAL/DIRT	70.00	95.00	%

Other:

8. Is the wastestream being imported into the USA? Yes __ No X
9. Does the wastestream contain PCBs regulated by 40CFR? Yes __ No X
   PCB Concentration .00 ppm
10. Is the wastestream subject to the Marine Pollutant Regulations? Yes __ No X
11. Is the wastestream subject to Benzene NESHAP? Yes __ No X
    If yes, is the wastestream subject to Notification/Control Requirements? Yes __ No X
    Benzene Concentration .00 ppm
12. Is the wastestream subject to RCRA subpart CC controls? Yes __ No X
    Volatile Organic Concentration .00 ppmw
    CC Approved Analytical Method? Yes __ No X
    Generator Knowledge? Yes __ No X
13. Is the wastestream from a CERCLA or state mandated cleanup? Yes __ No X

14. **Container Information** :

Packaging: 301H2 Type/Size: DF 30 GAL OPEN HEAD PLASTIC DRUM
301A2 Type/Size: DM 30 GAL OPEN HEAD (17H) DM

Shipping Frequency: Units .00 Per Day _ Per Week _ Per Month _ Per Qtr _ Per Year _ One Time _
UOM _____ DESCRIPTION: _____

15. **Additional Information** :

GENERATOR CERTIFICATION

I hereby certify that all information submitted in this and all attached documents contains true and accurate descriptions of this waste. Any sample submitted is representative as defined in 40 CFR 261 - Appendix I or by using an equivalent method. All relevant information regarding known or suspected hazards in the possession of the generator has been disclosed. I authorize sampling of any waste shipment for purposes of recertification.

Floyd Cam Balentine (Name(Print or Type)) 406-496-2221 (Phone) 8/10/05 (Date)

Floyd Cam Balentine (Signature) HS&E Manager (Title)

FACILITY NOTIFICATION

If approved for management, ONYX has all the necessary permits and licenses for the waste that has been characterized and identified by this profile.

Final HKM Report
Discharge Line Analysis

HKM ENGINEERING
1015 South Montana Street
P.O. Box 3588
Butte, MT 59702
Phone: 406.723.8213
Fax: 406.723.8328
www.hkminc.com

September 27, 2004

Cam Balentine
Rhodia Inc.
P.O. Box 3146
Butte, Montana 59702

RE: Results of Discharge Pipe Sampling

Dear Mr. Balentine:

Enclosed are the laboratory analytical results of the discharge pipe samples collected at the Rhodia site on August 19, 2004, as requested by Rhodia, Inc. The following presents a brief summary of the sampling methodology and results.

The work was done in accordance with section 2.1.7 of the Rhodia Work Plan for the Plugging, Removal, and Management of the Discharge Pipe. HKM personnel arrived at the Rhodia site at approximately 9:45 PM on August 19, 2004. Several pieces of concrete manhole and reddish colored discharge pipe were transported with a front-end loader to an area adjacent to a water supply to cut core samples for laboratory analysis. The water supply was necessary for cooling the rock saw used to cut the samples from each material. Several core pieces of each material were cut with the rock saw and placed in zip lock bags for toxicity characteristic leaching procedure (TCLP) and naturally occurring radioactive material (NORM) analyses. The samples of the concrete manhole were labeled CM-1 and CM-2 for TCLP and NORM analysis respectively. The samples of the discharge pipe were labeled DP-1 and DP-2 for TCLP and NORM analysis respectively. The TCLP samples were delivered to the HKM Laboratory on August 19, 2004 and the NORM samples were shipped UPS to Energy Laboratories in Casper, Wyoming on the same day.

Table 1 presents the results of the TCLP analysis and Table 2 presents the results of the NORM analysis. Copies of the laboratory analytical reports are also attached.

If you have any questions please call me at 723-8213. HKM Engineering appreciates the opportunity to be of service to Rhodia Inc. and looks forward to working with you in the future.

Sincerely,

John R. Davis
Environmental Engineer

Attachments

BOZEMAN, MONTANA
BUTTE LABORATORY
MILES CITY, MONTANA
SHERIDAN, WYOMING
HELENA, MONTANA
406.442.0370

TABLE 1 - TCLP METALS CONCENTRATION (ug/L)								
Sample ID	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
DP-2	<29.9	575	18.3	19.1	<44.6	<.09	<102	<2.3
CM-2	<29.9	186 B	<8.1	33.2	<44.6	0.12 B	<102	4.6 B

B = Analyte detected but less than the contract required detection limit

TABLE 2 - NORM ANALYTICAL RESULTS (pCi/g)										
SAMPLE ID	Gross Gamma	Actinium 228	Bismuth 212	Bismuth 214	Lead 212	Lead 214	Potassium 40	Radium 226	Radium 228	Thorium 234
DP-2	13.7	1.2	<2.0	0.5	0.8	0.6	10.6	0.5	1.2	<2.0
CM-2	16.1	1.0	1.6	0.9	0.9	0.9	9.5	0.9	1.0	1.2

Toll Free 888.235.0515 · 307.235.0515 · Fax 307.234.1639 · casper@energylab.com · www.energylab.com

LABORATORY ANALYTICAL REPORT

Client: HKM Engineering
Project: Rhodia Discharge Pipe
Lab ID: C04080960-001
Client Sample ID: DP-2

Report Date: 09/01/04
Collection Date: 08/19/04 10:45
Date Received: 08/23/04
Matrix: Solid

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES - GAMMA							
Gross Gamma	13.7	pCi/g		0.5		E901.1	08/24/04 08:38 / db
Gross Gamma precision (±)	0.7	pCi/g				E901.1	08/24/04 08:38 / db
Actinium 228	1.2	pCi/g		0.5		E901.1	08/24/04 08:38 / db
Actinium 228 precision (±)	0.1	pCi/g				E901.1	08/24/04 08:38 / db
Bismuth 212	ND	pCi/g		2.0		E901.1	08/24/04 08:38 / db
Bismuth 214	0.5	pCi/g		0.5		E901.1	08/24/04 08:38 / db
Bismuth 214 precision (±)	0.1	pCi/g				E901.1	08/24/04 08:38 / db
Lead 212	0.8	pCi/g		0.5		E901.1	08/24/04 08:38 / db
Lead 212 precision (±)	0.1	pCi/g				E901.1	08/24/04 08:38 / db
Lead 214	0.6	pCi/g		0.5		E901.1	08/24/04 08:38 / db
Lead 214 precision (±)	0.1	pCi/g				E901.1	08/24/04 08:38 / db
Potassium 40	10.6	pCi/g		0.5		E901.1	08/24/04 08:38 / db
Potassium 40 precision (±)	0.4	pCi/g				E901.1	08/24/04 08:38 / db
Radium 226	0.5	pCi/g		0.5		E901.1	08/24/04 08:38 / db
Radium 226 precision (±)	0.1	pCi/g				E901.1	08/24/04 08:38 / db
Radium 228	1.2	pCi/g		0.5		E901.1	08/24/04 08:38 / db
Radium 228 precision (±)	0.1	pCi/g				E901.1	08/24/04 08:38 / db
Thorium 234	ND	pCi/g		2.0		E901.1	08/24/04 08:38 / db

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: HKM Engineering
Project: Rhodia Discharge Pipe
Lab ID: C04080960-002
Client Sample ID: CM-2

Report Date: 09/01/04
Collection Date: 08/19/04 10:45
Date Received: 08/23/04
Matrix: Solid

Analyses	Result	Units	Qual	RL	MCL/ QCL	Method	Analysis Date / By
RADIONUCLIDES - GAMMA							
Gross Gamma	16.1	pCi/g		0.5		E901.1	08/24/04 08:38 / db
Gross Gamma precision (±)	1.5	pCi/g				E901.1	08/24/04 08:38 / db
Actinium 228	1.0	pCi/g		0.5		E901.1	08/24/04 08:38 / db
Actinium 228 precision (±)	0.1	pCi/g				E901.1	08/24/04 08:38 / db
Bismuth 212	1.6	pCi/g		0.5		E901.1	08/24/04 08:38 / db
Bismuth 212 precision (±)	0.2	pCi/g				E901.1	08/24/04 08:38 / db
Bismuth 214	0.9	pCi/g		0.5		E901.1	08/24/04 08:38 / db
Bismuth 214 precision (±)	0.1	pCi/g				E901.1	08/24/04 08:38 / db
Lead 212	0.9	pCi/g		0.5		E901.1	08/24/04 08:38 / db
Lead 212 precision (±)	0.1	pCi/g				E901.1	08/24/04 08:38 / db
Lead 214	0.9	pCi/g		0.5		E901.1	08/24/04 08:38 / db
Lead 214 precision (±)	0.1	pCi/g				E901.1	08/24/04 08:38 / db
Potassium 40	9.5	pCi/g		0.5		E901.1	08/24/04 08:38 / db
Potassium 40 precision (±)	0.3	pCi/g				E901.1	08/24/04 08:38 / db
Radium 226	0.9	pCi/g		0.5		E901.1	08/24/04 08:38 / db
Radium 226 precision (±)	0.1	pCi/g				E901.1	08/24/04 08:38 / db
Radium 228	1.0	pCi/g		0.5		E901.1	08/24/04 08:38 / db
Radium 228 precision (±)	0.1	pCi/g				E901.1	08/24/04 08:38 / db
Thorium 234	1.2	pCi/g		0.5		E901.1	08/24/04 08:38 / db
Thorium 234 precision (±)	0.2	pCi/g				E901.1	08/24/04 08:38 / db

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

Chain of Custody and Analytical Request Record

Page 1 of 1

PLEASE PRINT, provide as much information as possible.
Refer to corresponding notes on reverse side.

ENERGY LABORATORIES

Company Name: HKM Engineering

Report Address: PO Box 3588, Butte, MT 59702

Invoice Address: Same

Project Name, PWS #, Permit #, Etc.: Rhodia Discharge Pipe

Contact Name, Phone, Fax, E-mail: John Davis 406-723-8213 jdavis@hkminc.com

Sampler Name if other than Contact:

Invoice Contact & Phone #: Sarah Harris 406-723-8213

Purchase Order #:

ELI Quote #:

Report Required For: POTW/WWTP DW
Other

Special Report Formats - ELI must be notified prior to sample submittal for the following:
NELAC ☐ A2LA ☐ Level IV ☐
Other
EDD/EDT ☐ Format

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers / Sample Type: A W S V B O / Air Water Soils/Solids Vegatation Bioassay Other / MATRIX	ANALYSIS REQUESTED: "NORM" gamma scan	SEE ATTACHED	Normal Turnaround (TAT)	RUSH Turnaround (TAT)
1	DP-2	8/19/04	1045	1S	X		X	
2	CM-2	8/19/04	1045	1S	X		X	
3								
4								
5								
6								
7								
8								
9								
10								

Notify ELI prior to RUSH sample submittal for additional charges and scheduling

Comments:

Receipt Temp °C

Cooler ID(s)

Custody Seal Y N

Intact Y N

Signature Match Y N

Lab ID

LABORATORY USE ONLY C0408091602

Custody Record MUST be Signed

Relinquished by: Justin P Davis Date/Time: 8/19/04 1500

Relinquished by: Date/Time:

Shipped by:

Shipped by:

Received by: Date/Time:

Received by: Date/Time: 8/23/04 1000

Sample Disposal: Return to client: Lab Disposal:

LABORATORY USE ONLY

Sample Type: # of fractions

Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, & links.

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4

Energy Laboratories Inc.

Sample Receipt Checklist

Client Name HKM Engineering

Date and Time Received: 8/23/2004 10:00:00

Work Order Number C04080960

Received by tld

Checklist completed by Tracy Welch 08-23-04 (Signature / Date)

Reviewed by _____ (Initials / Date)

Carrier name UPS

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	22 °C
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Adjusted? _____ Checked by _____

Any No and/or NA (not applicable) response must be detailed in the comments section below.

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments:

Corrective Action _____

5

ANALYTICAL SUMMARY REPORT

September 08, 2004

John Davis
HKM Engineering
PO Box 3588
Butte, MT 59702

Workorder No.: C04080960

Project Name: Rhodia Discharge Pipe

Energy Laboratories Inc. received the following 2 samples from HKM Engineering on 8/23/2004 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C04080960-001	DP-2	08/19/04 10:45	08/23/04	Solid	Gross Gamma
C04080960-002	CM-2	08/19/04 10:45	08/23/04	Solid	Same As Above

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative or Report.

If you have any questions regarding these tests results, please call.

Report Approved By: Roger Garling, Laboratory Supervisor

6

Date: *01-Sep-04*

CLIENT: HKM Engineering
Project: Rhodia Discharge Pipe
Sample Delivery Group: C04080960

CASE NARRATIVE

THIS IS THE FINAL PAGE OF THE LABORATORY ANALYTICAL REPORT

BRANCH LABORATORY LOCATIONS
eli-b - Energy Laboratories, Inc. - Billings, MT
eli-cs - Energy Laboratories, Inc. - College Station, TX
eli-g - Energy Laboratories, Inc. - Gillette, WY
eli-h - Energy Laboratories, Inc. - Helena, MT
eli-r - Energy Laboratories, Inc. - Rapid City, SD

ORIGINAL SAMPLE SUBMITTAL(S)
All original sample submittals have been returned with the data package. A copy of the submittal(s) has been included and tracked in the data package.

SUBCONTRACTING ANALYSIS
Subcontracting of sample analyses to an outside laboratory may be required. If so, ENERGY LABORATORIES will utilize its branch laboratories or qualified contract laboratories for this service. Any such laboratories will be indicated within the Laboratory Analytical Report.

SAMPLE TEMPERATURE COMPLIANCE: 4°C (±2°C)
Temperature of samples received may not be considered properly preserved by accepted standards. Samples that are hand delivered immediately after collection shall be considered acceptable if there is evidence that the chilling process has begun.

ENERGY LABORATORIES, INC. - CASPER,WY certifies that certain method selections contained in this report meet requirements as set forth by NELAC. Some client specific reporting requirements may not require NELAC reporting protocol. NELAC Certification Number E87641.

ELI appreciates the opportunity to provide you with this analytical service. For additional information and services visit our web page www.energylab.com.

The total number of pages of this report are indicated by the page number located in the lower right corner.

Chain of Custody and Analytical Request Record

Page 1 of 1

ENERGY LABORATORIES

PLEASE PRINT, provide as much information as possible.
Refer to corresponding notes on reverse side.

Company Name: HKM Engineering	Project Name, PWS #, Permit #, Etc.: Rhodia Discharge Pipe
Report Address: PO Box 3588 Butte, MT 59702	Contact Name, Phone, Fax, E-mail: John Davis 406-723-8213 jdavis@hkminc.com — Sampler Name if other than Contact:
Invoice Address: Same	Invoice Contact & Phone #: Sarah Harris 406-723-8213 — Purchase Order #: — ELI Quote #:

Report Required For: POTW/WWTP DW
Other _____

Special Report Formats - ELI must be notified prior to sample submittal for the following:
NELAC ☐ A2LA ☐ Level IV ☐
Other _____
EDD/EDT ☐ Format _____

	SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX	Number of Containers / Sample Type: A W S V B O / Air Water Soils/Solids Vegatation Bioassay Other	"NORM" gamma scan	SEE ATTACHED	Normal Turnaround (TAT)	RUSH Turnaround (TAT)
1	DP-2	8/19/04	1045	S		X		X	
2	CM-2	8/19/04	1045	S		X		X	
3									
4									
5									
6									
7									
8									
9									
10									

ANALYSIS REQUESTED

Notify ELI prior to RUSH sample submittal for additional charges and scheduling

Comments:

Receipt Temp 22 °C
Cooler ID(s) Box-UPS
Custody Seal Y (N)
Intact Y N
Signature Match Y N
Lab ID

LABORATORY USE ONLY
C0408091600

Custody Record MUST be Signed

Relinquished by: John P Davis — Date/Time: 8/19/04 1500 — Shipped by:
Relinquished by: — Date/Time: — Shipped by:
Received by: — Date/Time:
Received by: — Date/Time: 8/23/04 1000

Sample Disposal: Return to client: _____ Lab Disposal: _____

LABORATORY USE ONLY
Sample Type: _____ # of fractions _____

Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, & links.

Appendix 5.5.24-B

Video Log of Discharge Pipe Area

Instructions for Accessing Appendix 5.5.24-B – Video Log of Discharge Pipe Area

1. On the project ftp site, navigate to the *Posm* folder located here: <**Revised RFI Report\Section 5.5 SWMU Investigation & Results\SWMU 24\Posm**>

2. Copy the entire *Posm* folder to a directory location on the local computer (this may take a while for the contents to copy over)

3. Open the *Posm* folder from the local computer

4. Double click the file named <**Index.html**> This will open a web page in your browser

5. Click the link in the *Session Name* column that you wish to access

6. You will see links to information under 'Saved Reports for the Current Session'

7. To access the video, click the link titled 'List of the Captured Video'

8. Click the .**mpg** video file listed on the page

9. A dialog window will open which prompts 'Do you want to open or save this file?'

10. Click <Open>, and this will launch the video.