Klamath Watershed Management Area

421 - Siskiyou County, Septage Pond Closure

Siskiyou County Technical and Scientific Documentation Table		
Technical and Scientific Document Name	**Document Description**	**Relevant page #**
SHN Consulting Engineers & Geologists, Feasibility Study, Siskiyou Septage Disposal, February 2011.	Feasibility Study, Siskiyou Septage Disposal, SHN Consulting Engineers & Geologists, Commissioned 2010, Finalized February 2011.	i-iii;1-3;30-31
Bill Navarre, Montague Septage Pond Closure Plan Cost Estimate, November 2012.	Cost estimate to close and remediate septage pond project site.	All
Supporting Documents provided digitally via the BMS upload and by CD		
Miguel Villicana, North Coast Regional Water Quality Board October 7, 2003.	Regional Board Urges County to Address Septage Waste Management Practices, Miguel Villicana, October 7, 2003.	All
Roy O'Connor, North Coast Regional Water Quality Board, October 30, 2008.	Regional Board Strongly Recommends Closure of Pond, Roy O'Connor, October 30, 2008.	All
Klamath Riverkeeper, Notice of Intent to Seek a Preemptory Writ of Mandate Ordering Siskiyou County to Immediately Comply with the Porter Cologne Act, October 13, 2009	Notice of Intent to Seek a Preemptory Writ of Mandate Ordering Siskiyou County to Immediately Comply with the Porter Cologne Act, Klamath Riverkeeper, October 13, 2009	All
Terry Barber, Letter: Board of Supervisors, January 5, 2010.	Board of Supervisors Discussion Regarding Comprehensive Management of Septage, Terry Barber, January 5, 2010.	All
Roy O'Connor, North Coast Regional Water Quality Board, February 2010.	Regional Board Continues to Discourage Use of Facility, Roy O'Connor, February 2010.	All
Terry Barber, Regional Board/County Meeting File Notes, December 1, 2011.	Regional Board/County Meeting File Notes, Terry Barber, December 1, 2011.	All
Terry Barber, Memo-Board of Supervisors, January 3, 2012.	Board of Supervisors Memo with Summary and Timeline, Terry Barber, January 3, 2012	All

California Regional Water Quality Control Board

North Coast Region

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Siskiyou County OCT 2003 Public Health

October 7, 2003

County of Siskiyou
Department of Public Health
Attn: Ms. Terry Barber
806 South Main Street
Yreka, CA 96097

Dear Ms. Barber:

Subject: Siskiyou County Septage Disposal

File: Siskiyou County Misc. – Health Dept., City of Dorris, WWTF, WDID No. 1A77141OSIS

This letter is intended to update you on developments regarding septage disposal at the City of Dorris' wastewater treatment ponds (ponds). We also want to initiate a discussion on long-term plans for handling, treating and disposing of septage throughout Siskiyou County. We are interested in Siskiyou County Department of Environmental Health (SCDEH) being the lead in coordinating a program for appropriate handling, treatment and disposal of septage in Siskiyou County.

In the past, we informed you about septage disposal in the City of Dorris' ponds. According to City of Dorris representatives, septage has been disposed at the ponds during the last fifteen years. However, we only have records dating back to 2001 that report the monthly volumes being disposed. These records show septage disposal rates fluctuating between approximately 75,000 to 175,000 gallons per month.

Septage contains high concentrations of Total Suspended Solids (TSS) and Biochemical Oxygen Demand (BOD). These parameters are used to confirm that facilities meet secondary treatment standards. These are minimum standards required in California. Wastewater treatment processes for the City of Dorris are not designed to treat septage in the amount currently being disposed. Random septage sampling results received by our office on July 21, 2003 confirm high BOD, TSS, and heavy metals concentrations as well as low detection of some volatile organic compounds.

Three main concerns arise from disposing of septage in the City of Dorris' ponds. These include not meeting secondary treatment standards and potentially disposing of a 'designated' waste into an inadequate facility. Monitoring results support these concerns. The third concern is that a hazardous substance can also be disposed. Therefore, we have put the City of Dorris on notice to cease accepting and disposing of septage in the ponds.

This measure affects the current system for handling and disposing of septage in Northeastern Siskiyou County as well as in Klamath County, Oregon. For this reason we are allowing septage disposal to continue until an acceptable alternative can be implemented. Representatives from the Oregon Department of Environmental Quality (ODEQ) have informed us that there is a company interested in setting up a facility in Klamath County to receive and treat septage. Until such facility starts operating the goal will be to reduce septage disposal at the City of Dorris's pond gradually. Long-term, using the new facility might be a solution for disposing septage generated in Northeastern Siskiyou County.

All concerns discussed above also apply to other facilities in Siskiyou County currently accepting septage. Our records indicate that septage is being disposed at a pit located in the Montague airport and the Happy Camp wastewater treatment facility. Also, we have received information indicating that septage generated in the Scott Valley area is disposed either at the Fort Jones or the City of Etna's WWTFs.

While monitoring records indicate that the Happy Camp WWTF continues to meet secondary treatment standards, we have no information on the other facilities. The desired goal is for all septage generated in Siskiyou County to be treated and disposed using environmentally acceptable guidelines. In addition to complying with Health and Safety Code regulations, septage disposal must comply with applicable provisions of the North Coast Water Quality Control Plan. We do not have any information suggesting that the latter is occurring. In the past, visual observations of the Montague Airport pit indicated that major upgrades are necessary for appropriate septage treatment at this facility.

We intend to issue Siskiyou County waste discharge requirements for the Montague Airport pit facility in the future. Please inform us if Siskiyou County keeps records of septage volumes that are disposed at the Montague Airport pit. Also, let us know of any other administrative measures that have been implemented to minimize disposal of undesired substances. We will be requesting information from Fort Jones and the City of Etna regarding septage disposal at their WWTFs. We will use any information compiled to determine the next course of action.

In summary, there is a tentative plan for adequate handling and disposal of septage generated in Klamath County, Oregon. This would include installing a facility that will treat and dispose of septage constituents using environmentally acceptable guidelines. This facility could also be an

option for dealing with septage generated in Northeastern Siskiyou County. This will allow suspending septage disposal in the City of Dorris's ponds. Septage treatment and disposal throughout Siskiyou County needs to be conducted in a manner that abides with California regulations. We are interested in SCEHD developing a long-term plan for dealing with septage throughout Siskiyou County. We are amenable to working with SCEHD in establishing a policy that will facilitate creation of a long-term plan. What tasks/milestones and target dates do you envision to reach the long-term goal?

Please inform us if you are interested in meeting to discuss the contents of this letter. If you have any questions contact me at (707) 576-2347.

Sincerely,

Miguel A. Villicana
Water Resources Control Engineer

MAV:js/Siskiyou County Septage

cc: Mr. Arlen Garrison, Public Works Director, City of Dorris, P.O. Box 768, Dorris, CA 96023
Mr. Bob Baggett, Oregon Department of Environmental Quality, 2146 NE 4th Street, Suite 104, Bend, OR 97701

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North Coast Region
Bob Anderson, Chairman

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Arnold Schwarzenegger
Governor

October 30, 2008

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SISKIYOU COUNTY
PH & CD

Terry Barber
Siskiyou County Health Department
806 South Main Street
Yreka, CA 96097

Dear Terry:

Subject: Septage Disposal Pond at the Montague Airport

File: Siskiyou County Montague Septage Facility

Thank you for meeting with me on May 14, 2008 at your office regarding septage disposal at the Siskiyou County Montague Airport. I appreciate the time you and Randy Akana spent with me.

Approximately 1.5 million gallons of septage are disposed of yearly in an unlined percolation/evaporation pond adjacent to the Airport. The pond is not designed to treat these wastes nor is it designed to protect the quality of underlying ground water. There is no load checking program in order to verify that these wastes do not contain toxic materials or other non-standard pollutants. At this time, the facility is not under permit from the Regional Water Board. The continued use of this uncontrolled, poorly designed facility presents a huge liability to the County in the event that groundwater contamination occurs.

The County has contracted with Pace Engineering to complete a study that identifies potential alternatives for disposal of septage in Siskiyou County. We have been in contact with Pace, and have talked in detail about the potential use of one of several existing disposal facilities, such as the existing wastewater treatment facilities at Weed, Lake Shastina and Yreka. None of these facilities, however, currently have the capacity to accept this volume of septage and still be fully protective of water quality. In order for any of these facilities to be able to accept such wastes, they would need to submit a revised Report of Waste Discharge (facility application) to the Regional Water Board for review. We stand ready to discuss the information necessary for the facility application and can provide details on expected permit conditions. We look forward to reviewing the results of the Pace study as soon as it is available.

Because of our continuing concerns about the septage disposal pond's ongoing potential impacts to groundwater, we are advising you to take immediate steps to cease accepting septage waste at the Montague facility, and to direct septage haulers to dispose of the wastes at a permitted facility. In addition, we would strongly recommend that the County develop a plan for properly closing the Montague septage disposal pond in a manner that would protect ground water quality into the future. Such a plan should consist of removal and proper disposal of accumulated wastes and/or closure in place with adequate groundwater monitoring.

If you have any questions or comments, or if I can help in any way, please call me at (707) 576-2670.

Sincerely,

Roy O'Connor
Associate Engineering Geologist

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cc: Randy Akana, Siskiyou County Department of Public Works, 305 Butte Street, Yreka, CA 96097

Steven Neill, City of Yreka, 701 Fourth Street, Yreka, CA 96097

Tom Moore, City of Weed, P.O. Box 470, Weed, CA 96094-0470

L. James Lea, Lake Shastina Community Services District, 16320 Everhart Drive, Weed, CA 96094

California Regional Water Quality Control Board
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Arnold Schwarzenegger
Governor

February 3, 2010

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FEB 05 2010
SISKIYOU COUNTY
PH & CD

Ms. Terry Barber
Siskiyou County Health Department
806 South Main Street
Yreka, CA 96097

Dear Ms. Barber:

Subject: Septage Disposal Pond at the Montague Airport

File: Siskiyou County Montague Septage Facility

This letter is in regards to the septage disposal pond at the Siskiyou County Montague Airport. I met with Mike Moses and Randy Akana in October 2009 concerning the closure requirements for the pond. Mike provided me with a Closure Plan prepared by County staff. This document indicated that closure of the pond was scheduled to be initiated on March 1, 2010. We have not received any subsequent correspondence requesting a delay in this schedule therefore we assume the March 1, 2010 date is still set for closure of the pond. Please let us know if that is not the case.

I believe we have shown our willingness to work with you on a cooperative basis to resolve this matter. However, this unauthorized discharge continues to pose a threat to water quality and the ongoing liability related to any potential ground water cleanup will only increase over time. We are advising you to take proactive steps to cease accepting septage waste at the Montague facility, and to direct septage haulers to dispose of the wastes at a permitted facility.

If you have any questions or comments please call me at (707) 576-2670.

Sincerely,

Roy O'Connor
Associate Engineering Geologist

020310_RRO_Siskiyou_12510.doc

cc: Randy Akana, Siskiyou County Department of Public Works, 305 Butte Street, Yreka, CA 96097

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VIA CERTIFIED MAIL
RETURN RECEIPT REQUESTED

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Tom Guarino
Siskiyou County Counsel
205 Lane Street,
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October 13, 2009

Re: Notice of Violation and Intent To Seek a Peremptory Writ of Mandate Ordering Siskiyou County to Immediately Act to Comply With Its Mandatory Duties Under Porter-Cologne Act Section 13260

To the above-listed notice recipients:

Klamath Riverkeeper ("KRK") hereby provides notice of KRK's intent to seek a peremptory writ of mandate for the County's violation of its mandatory duties under the Porter Cologne Act.

I. ORGANIZATION GIVING NOTICE OF PORTER COLOGNE ACT VIOLATION

KRK is a non-profit organization with over 3,500 supporters and 300 members. We use grassroots, regulatory, legal and scientific tools to restore water quality and fisheries in our watershed, bringing vitality and abundance back to the river and its people.

KRK's contact information is as follows:

Klamath Riverkeeper
Attn: Erica Terence, Riverkeeper
P. O. Box 751
Somes Bar, CA 95568
Telephone/Fax: (530)627-3311

KRK's members depend on a healthy Klamath River watershed for a wide variety of activities such as commercial, recreational and subsistence fishing, swimming, boating, and religious purposes, including prayer. Probable groundwater contamination from the Siskiyou Airport septage pond threatens the quality of nearby water sources, including the nearby Oregon Slough and the Shasta River, that eventually drain to the Klamath River, thereby threatening our members use and enjoyment of the river and thus the quality of life for our members. Probable groundwater contamination also threatens drinking water supplies for residents of the Shasta River Watershed via private wells or spring flows.

II. THE ENTITIES RESPONSIBLE FOR THE ILLEGAL SEPTAGE POND

Siskiyou County owns and operates the open-air septage pond adjacent to Siskiyou County Airport. The private company Siskiyou Sanitary Service has sometimes performed maintenance services on the pond, according to County records. Siskiyou County was incorporated in 1852. Siskiyou County General Services, the county division now charged with oversight of the septage pond, has an office at 1312 Fairlane Rd. in Yreka, California. Siskiyou County Public Health Department, the county division that tracks gallons dumped in the pond, collects septage dumping fees and conducts site inspections, has an office at 806 S. Main St. in Yreka, California.

III. BACKGROUND ON THE ILLEGAL SEPTAGE POND

Despite later permitting requirements in the Porter Cologne Water Quality Control Act, no permit was ever or has yet been obtained to operate the pond, which now accepts more than a million gallons of off-site waste disposal per year, possibly including hazardous materials such as leachate from a nearby landfill.

The Siskiyou Airport was built for use by the United States Air Force, but was turned over to Siskiyou County in 1972. A letter from the airport coordinator to the Yreka dump, dated October 3, 1972, indicates that the septage pond there was intended at that time as a temporary solution only. In the spring of 1979, the North Coast Regional Water Quality Control Board corresponded with Siskiyou County to waive California Environmental Quality Act requirements and grant approval of the septage pond. Oddly, records indicate that the Water Board approved the pond a month before exempting the pond from Porter Cologne waste-discharge reporting requirements and CEQA review.

An undated Siskiyou Airport Infrastructure Improvement Plan ("Plan") on file at County offices describes the pond's physical characteristics. The "shallow" pond covers about 2 acres on the southwest corner of the Siskiyou County Airport property, surrounded by low berms.

Page 2 of the Plan explains that trucks back down a ramp to discharge waste into the pond. While liquids discharged into the pond evaporate during the summer months, "It is suspected that liquids also percolate from the bottom of the pond, although that has not been investigated, monitored or measured. The pond collects rainwater during the winter, but winter storage volume has not been a problem," according to the Plan at page 2.

IV. GROUNDWATER CONTAMINATION RISKS OF THE ILLEGAL SEPTAGE POND

"The pond may be lined, but it appears that the drains are open. Groundwater is known to be very shallow in the area, and groundwater monitoring is not performed," page 2 of the Plan describes. A single, loose page in the Siskiyou County Public Health file, labeled 1987 Environmental Impact Report/ Environmental Assessment on the Siskiyou County Airport, describes a high water table.

USGS groundwater information indicates the Shasta River watershed is largely composed of highly permeable quarternary volcaniclastic material (avalanche deposits filled with air pockets).

The Plan also provides that wastes in the pond have never been dredged or removed. Because more than a million gallons of sludge are added to the pond each year, and none of it is being hauled away and none of it overflows, it is highly probable that wastes are contaminating nearby groundwater supplies. Since no NPDES permit or WDR requires monitoring, the impacts and extent of impacts to groundwater is unknown.

V. ILLEGAL DUMPING IN THE ILLEGAL SEPTAGE POND

The pond is gated and locked, but unfenced and unattended. While 1999 county record suggests that pond security has been adequate, inspection reports document security violations on a near-monthly basis in recent years. In addition, in 1999, Siskiyou County solid waste manager Roger Cummins documented an incident witnessed by a road crew foreman where an unidentified orange truck spilled septage at the pond, then left without reporting it or cleaning it up. Another county record indicates that hundreds of thousands of gallons of waste dumped at the pond probably went unreported in 2006.

The Plan reports that local septage haulers are given a key to the lock on the "honor system." This enables dumpers to dispose of waste there without paying fees, accounting for the waste, or following best management practices or safety procedures. An e-mail from airport investor Dean Gradwell in February of 2006, on file at the County Public Works Department, complains of "unsafe and I'm sure illegal dumping still going on." According to Mr. Gradwell's complaint, "Every day that I'm there, I see several trucks backing up and unloading. I have been there at night and have witnessed large (18 wheeler) trucks unloading perhaps thousands of gallons." Mr. Gradwell's e-mail urges immediate closure of the pond, and expresses frustration that "someone at the County doesn't seem to get it."

VI. FEES COLLECTED TO CLOSE THE POND

An ordinance passed by the Siskiyou County supervisors in June of 1996 instituted a dumping fee of $.05/gallon. Previously, septage hauling trucks were charged $7.50 per load, with a several-year lapse in fee collection in the 1980s exposed by a grand jury investigation in 1992. Fees collected accrue in an account dedicated to implementing an alternative to the current septage infrastructure, infrastructure that the county admits poses a "seepage concern." According to a note filed following a county meeting in response to a letter from the Regional Water Quality Control Board, in 2003, the account contained $173, 548.00. That note also reports that an average of $24,700.00 is added to the account each year from fees collected. An engineering firm contracted by the county estimates that simply closing the pond would cost about $51,000.

Investigations on alternative solutions have been ongoing since at least 1995, when the County concluded that a Cease and Desist Order issued to the neighboring Butte Valley septage facility would increase the need for waste capacity elsewhere in the county. Septage facilities near Happy Camp, Dorris and Tule Lake were also shut down, again narrowing the list of options, and increasing the volume of septage sent to the Siskiyou Airport pond significantly.

IV. WARNINGS AND COMPLAINTS

In a letter to Siskiyou County dated October 7, 2003, the North Coast Regional Board reported random samples showing that the Dorris septage pond had Biological Oxygen Demand (BOD), Total Suspended Solids (TSS) and heavy metals concentrations outside acceptable levels set in environmental guidelines and minimum standards, and ordered Dorris to cease accepting and disposing of septage in their facility.[1] Lower levels of volatile organic compounds were also

[1] Dorris now sends its septage to the Siskiyou County Airport pond.

detected there, the letter said. The letter also noted that other septage disposal facilities in Siskiyou County are similarly problematic, and notified the county of the water board's intent to develop waste discharge requirements (WDRs) for the Siskiyou County Airport septage pit in Montague. The letter encouraged Siskiyou County to develop a long-term, county-wide septage management plan, and asked the County to come up with tasks/milestones and target dates for such a plan.

More recently, in a letter to Siskiyou County dated October 30, 2008, the North Coast Regional Board warned that "continued use of this uncontrolled, poorly designed facility adjacent to the Siskiyou County Airport near Montague presents a huge liability to the County in the event that groundwater contamination occurs." As such, the letter said, the County should cease accepting septage at the airport pond and develop a plan for closing the pond "in a way that protects groundwater into the future."

In light of investigations showing that the most feasible alternative is to transfer the septage to the Lake Shastina wastewater treatment facility after that facility undergoes a yet-unfinished upgrade, the Siskiyou County Board of Supervisors elected to close the airport septage pond in July, 2009.

Shortly after the county received the water board's October 30, 2008 letter, in a letter dated November 20, 2008, Airport Advisory Committee Chairman Vernon Fueston voiced growing concern over the septage pit as a potential breeding ground for disease vectors such as mosquitoes and a high risk of groundwater contamination.

"Everything pumped from septic tanks in the county is being pumped into this pond. In addition, other materials including bio waste, hazardous chemicals, etc. are being dumped into this pond. To the committees knowledge there has not been any groundwater testing ever performed, so we have no idea of the hazards," Fueston's letter stated.

In that letter, Fueston also recommended to the county that it stop accepting waste there and close the pond.

IV. PORTER-COLOGNE ACT VIOLATIONS

California's Porter-Cologne Water Quality Control Act § 13260 provides that " Any person discharging waste, or proposing to discharge waste, within any region that could affect the quality of the waters of the state, other than into a community sewer system.... shall file with the appropriate regional board a report of waste discharge..." Dumping and/or allowing the dumping of an estimated 1.5 million gallons of septic and other waste each year into an open pit dangerously close to the water table constitutes a discharge of waste into a region that could affect quality waters of the state. Accordingly, the County, as owner and operator of the septage pond has a mandatory duty to immediately file a report of waste discharge for the septage pond. However, County records indicate that the County has never filed a report of waste discharge for the Siskiyou septage pond. Failure to file a report of waste discharge and obtain a WDR constitutes a failure by the County to act as required by the Porter Cologne Water Quality Control Act.

V. CONCLUSION

KRK recognizes that Siskiyou County's board of supervisors decided July 14, 2009 to close the pond and transfer wastes contained therein to the Lake Shastina waste treatment plant. However, that facility is currently undergoing an upgrade and cannot presently accept the wastes from the septage pond. Thus the County is required to file a report of waste discharge pursuant to section 13260. Moreover, even after the septage pond is no longer accepting waste, it still constitutes a discharge of waste that must be permitted under waste discharge requirements until final cleanup and closure has been completed. Accordingly, KRK demands that the County immediately comply with its mandatory duties under section 13260 and submit a report of waste discharge to the Regional Board. KRK also requests that the County take all necessary steps to ensure that the illegal and potentially unsafe problem is dealt with in a timely and responsible manner.

KRK has retained legal counsel to represent it in this matter. Please direct all communications to:

Daniel Cooper
Lawyers for Clean Water, Inc.
1004-A O'Reilly Avenue
San Francisco, CA 94129
Telephone: (415) 440-6520
Email: cleanwater@sfo.com

If you intend to fully comply with all duties set forth in this letter by November 14, 2009, please contact Riverkeeper's legal counsel immediately. Likewise, if you disagree with any of the allegations in this letter, we request that you contact Riverkeeper's legal counsel immediately to discuss the matter.

Sincerely,

Erica Terence, Riverkeeper
Klamath Riverkeeper

Feasibility Study
Siskiyou County Septage Disposal

Prepared for:

Siskiyou County

Consulting Engineers & Geologists, Inc.

350 Hartnell Ave, Suite B
Redding, CA 96002-1875
530/221-0135

February 2011
510008

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4.0 Closure of the existing septage facility

The existing septage receiving pond was originally constructed in the early 1970s, and is beyond its design life. The pond is approximately 200 feet by 200 feet with berms approximately 15 feet high and 60 feet wide at the base. Although the depth of the septage within the pond is not known it is assumed that the pond was excavated to a depth of 5 feet below the original grade, making the total depth approximately 20 feet.

The pond has been in service for close to forty years and is currently at or beyond its capacity. The pond is unlined and it is believed the infiltration from the ponds has direct contact to the groundwater in the immediate vicinity. The RWQCB has directed Siskiyou County to close the existing septage receiving pond, and the County has scheduled its closure for no later than November 1, 2013.

Closure of the pond will require the existing septage sludge to be characterized through lab analysis to determine if the sludge meets the EPA 503 regulations. Once the sludge has been certified to meet the land application requirements the sludge is to be removed, and placed in temporary drying beds for dewatering and drying prior to final disposal. The temporary drying beds would consist of grading an area of approximately one acre to remove the existing vegetation and create a 2 foot berm around the drying bed. The sludge would then be either pumped or hauled and placed into the drying bed in a 1 to 2 foot lift to dry in the summer heat. Each drying bed application would need to dry for one to two weeks depending on the moisture content of the sludge prior to being loaded into trucks for disposal. Disposal of the dried sludge could be either through land application to agricultural fields under a General Order from the RWQCB, or placement in a landfill as Alternative Daily Cover (ADC) or other fill material. Additional discussions with the RWQCB should be undertaken to determine if the General Order requirements may be waived for the disposal of existing septage sludge if it is applied to the existing septage disposal site. The volume of material is not considered significant to use in the production of biosolids for sale, and land application or disposal to a landfill are the only reasonable options at this time. Refer to the previous discussion on biosolids in Alternative 5, Composting of Biosolids for the types of biosolids and regulations.

The volume of sludge currently in the pond is difficult to quantify, as the actual depth of the pond and the overall solids content cannot be determined without further investigation. Based on past experience and visual observation of the pond, the solids content of the sludge is assumed to be in the range of 10 to 12 percent dry solids. Based on field measurements and assumptions of the total depth of material (20 feet), it is estimated that the pond currently contains approximately 800,000 cubic feet of sludge, or approximately 2,500 to 3,000 DT. If dewatered and dried to 30 percent solids, 80,000 to 100,000 wet tons of processed sludge will be removed from the site for disposal. Based on the anticipated volume and hauling distance to the nearest landfill, land application would be the most cost effective means of disposal. Refer to Table 4.1 for estimated costs.

Land application of dewatered sludge is based on the assumption that the dewatered material is acceptable for land application. Laboratory analysis of the sludge will be required to determine if the sludge will be acceptable for land application. Land application also assumes that the material will be land applied to the County property at the airport. Transportation to another site away from the airport will incur an additional cost for transportation. Once the sludge and contaminated

soils are removed from the existing pond, the remaining berm material will be re-graded to fill-in the pond and blend into the existing grades.

After the material is removed and dried, the option exists for disposal of the material at a municipal landfill. Dewatered sludge of this type is typically accepted at most municipal landfills, depending on their local criteria. For this process, sludge can either be hauled to the Anderson Landfill in Shasta County, or to the Dry Creek Landfill near Medford, Oregon. Both of these facilities are accepting municipal sludge and biosolids. Exact details for the disposal of the sludge will be determined once the final volume and chemical constituents are determined. It should be noted that the current regulations for disposal at a certified landfill are typically more restrictive than the requirements for land application.

If the existing sludge does not meet current land application or land fill requirements additional treatment may be required to stabilize the sludge prior to application. This could include the addition of lime or other processes not identified. Although it is not anticipated that additional treatment would be required, without lab analysis of representative samples of the existing sludge, it is not possible to know what potential contaminates have been introduced into the existing pond. The required sampling and analysis of the samples are beyond the scope of this report.

Table 4.1
Budgetary Estimates for the Closure of the Existing Pond

Closure Tasks	Units	Unit Cost	Land Application	Landfill ADC[1]
Engineering, analysis and permitting			$75,000	$75,000
Sludge removal and dewatering	2,500 DT[2] (at 12% solids)	$100/DT	250,000	$250,000
Land application	10,000 CY[3] (at 35% solids)	$5.00/CY	$50,000	N/A
Transportation[4]	500 round trips of 125 miles	$2.25/mile	N/A	$140,000
Landfill Disposal[5]	10,000 DT	$35/DT	N/A	$350,000
Re-grading of site	30,000 CY	$1.00 CY	$30,000	$30,000
Total[6]			$405,000	$845,000

1. ADC, Alternative Daily Cover
2. DT, Dry Ton
3. CY, Cubic Yard
4. Transportation distance is for transport to the Dry Creek Landfill.
5. Disposal rates are based on current (2010) rates.
6. Costs assume no additional treatment or stabilization is required of the sludge prior to application.

COUNTY OF SISKIYOU

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TERRY BARBER
DIRECTOR

STEPHEN PERLMAN, M.D.
HEALTH OFFICER

December 1, 2011

To File

From: Terry Barber
Director, PH&CD

Meeting this date with representatives from the NCRWQCB, Lake Shastina, PHCD, BOS and CAO (see attached sign in sheet)

Update on Status of existing Montague septage pond

County CAO and Supervisor Kobseff assured that NCRWQCB that the County is committed to closing the Montague pit on or prior to the November 2013 date. However, lack of funding has prevented staff from developing a replacement facility as directed by they BOS.

Staff advised that since the County set the November 2013 deadline, it has commissioned a feasibility study to identify viable solutions. Based on the results of the study, the Board of Supervisors directed staff to identify and implement a project to keep septage waste disposal in the County. In addition, the Board directed staff to work with Lake Shastina Community Services District to explore a joint partnership.

Staff has met with Lake Shastina on several occasions to discuss possible options. However, due to Lake Shastina's ongoing permitting project, we have not been able to move a transfer station concept project forward due to unknowns related to the on-going permit process.

Staff advised the Water Board that it is exploring a transfer station option where by septage would be brought to Lake Shastina by the individual haulers, solids would be dewatered and effluent would be discharged into the LS waste water treatment system. Solids could be land applied if appropriate discharge permits were obtained or hauled to a permitted landfill. This concept is not an option that was identified or discussed in the Feasibility Study. Therefore additional financial analysis is needed to understand the viability of the project. In addition, the project will require a modification to the LS wastewater treatment permit which is scheduled for NCRWQCB review and approval in March 2012. In addition, while staff submitted a CDBG PTA grant to perform the engineering on this project, the application was not funded.

There was a discussion about the timing of the proposed project relative to the November 2013 closure date. Water Board assured county staff that the project was a mutual priority for them and they would be motivated to move the permit through the system provided the ROWD was complete. Staff was assured that if a good faith effort was being made to develop the project there could be some flexibility in November 2013 closure date.

There was discussion relative to the desire to avoid an interim project of installing a transfer station at LS. The project would be an interim or short-term solution where by the County would install a holding tank and all waste would be transferred and disposed of in Anderson.

We also discussed closure of the existing facility. Water Board staff indicated that their primary goal is to cease use of the Montague facility. Physical closure may be temporarily deferred while the County uses available resources to replace the facility. Closure of the facility will require developing a plan and submitting it to the Water Board for approval. The closure process would likely include extraction and drying of solids on the airport runway and land applying or disposing of them in a lined landfill (Medford or Anderson). Monitoring wells will likely be required to determine if any groundwater contamination has occurred.

The closure fund currently has a balance of $237K and generates approximately $25K per year. The $.05 fees have not been increased since 1998. It was agreed that it would be prudent to recommend a fee increase to the BOS to generate additional funds to accomplish the Board's directive. Fees are well below the existing market rate and fees will be increased to a minimum of $.14 with a LS transfer station. Doubling the existing $.05 fee would result in an increase of $50 per 1000 gallons of waste discharged.

Water Board staff commented that Siskiyou County is the only rural county in their region to consider subsidizing this industry. Most Counties have either opted or been forced to transfer waste out of the county to regional facilities or the receiving facilities have been privatized.

Next Steps

- It was agreed that the County and LS need to meet to fully develop a proposed project, including the conceptual design and financial feasibility.
- Parties would indentify funding to build project.
- If concept were mutually agreeable, LS would work to formalize the relationship roles and responsibilities.
- Engineer would be hired to complete the ROWD and submit application to the Water Board. Subsequent ROWD would be required for the LS permit.

County Septage 1 Dec 11

Siskiyou County, Lake Shastina CSD,
North Coast RWQCB

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TERRY BARBER
DIRECTOR

STEPHEN PERLMAN, M.D.
HEALTH OFFICER

Date: January 3, 2012

To: Board of Supervisors

From: Terry Barber
Director, Public Health and Community Development

Re: Update regarding Montague Septage Receiving Facility Closure

The purpose of this memo is to update the Board regarding on-going activities relative to closure of the Montague septage facility as well as seek further direction on construction of a new in-county receiving facility.

History

The following is a summary of the activities and Board decisions that have occurred in the past two and a half years.

- July 2009. Staff requested and received authorization to develop a Montague pond closure plan.
- October 2009. The River Keeper advised the County of its intent to seek a preemptory writ of mandate regarding use of the unpermitted Montague septage facility.
- November 2009. Staff sought Board approval of a facility closure plan and recommended that the facility be closed effective March 1, 2010. The Board denied staff's request and approved a facility closure date of November 1, 2013. Staff was further directed to pursue construction of a new in-county septage facility.
- January 2010. Staff issued an RFP soliciting proposals for a Septage Feasibility Study.
- April 2010. The Board authorized staff to contract with SHN Consulting to prepare the Feasibility Study.
- March 1, 2011. SHN Septage Feasibility study presented to the Board.

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- April 2011. Board directed county staff to explore a possible joint project with Lake Shastina Community Services District to develop a temporary septage transfer station whereby septage waste would be collected at Lake Shastina and transferred to Anderson, CA. The County would then pursue conversion of the temporary transfer station to a permanent facility where septage would be received and ultimately disposed of into the existing Lake Shastina waste water treatment system.

- July 2011. Staff met with NCRWQCB member Roy O'Connor to discuss the County's progress regarding pond closure plans. Mr. O'Connor encouraged the County to consider a possible alternative wherein septage, received at Lake Shastina, would be dewatered (either by belt press or settling pond), the effluent would then be discharged into the Lake Shastina system and the solids either land applied, or dried and disposed of in a lined landfill (Medford or Redding)

- August 2011. Staff met with Lake Shastina CSD reps to explore the recommended septage waste management option. While Lake Shastina was receptive to the concept, they needed assurances that the project would not jeopardize or interfere with their on-going sewer improvement project. Further discussions were postponed pending availability of Water Board Staff for participation and consultation...

- October 2011. The Board approved a CDBG Planning and Technical Assistance Grant application to fund conceptual design preparation and engineering specifications to locate a transfer station at Lake Shastina. The project was not funded.

- On December 1, 2011. Staff met with Lake Shastina and representatives of the North Coast Regional Water Quality Control Board, including Board member Mr. Bill Massey. The purpose the meeting was to discuss the County's desire to co-locate a septage receiving facility at Lake Shastina and seek permitting assistance.

The Montague facility closure is a high priority issue for the NCRWQCB and it continues to monitor the county's efforts to resolve the issue. County Staff, in an effort to implement the Board's directive, is actively working with Lake Shastina to develop a viable, permanent, in-county septage receiving facility

Due to financial resource limitations, every effort is being made to avoid implementing an interim, temporary transfer station in advance of a permanent solution. Development of a permanent facility will require time and funding to complete the following activities:

- Develop a conceptual project design with Lake Shastina CSD
- Prepare a closure plan for the existing facility. Physical closure may be temporarily deferred while resources are directed to new facility.
- Negotiate, develop and execute formal agreements with Lake Shastina Community Services District.
- Hire an engineer to prepare plans, identify construction costs and submit a permit application to the Regional Water Quality Control Board amending the Lake Shastina Waste Discharge permit
- Complete CEQA.
- Obtain funding to construct the facility,
- Commence and complete construction.

Funding is needed to complete nearly every aspect of the project. The County currently has $237,000 in reserves to assist with closing the facility and constructing a replacement. The County currently collects $.05 per gallon. While the facility generates approximately $25,000 per year, those funds are also used to offset operation and maintenance costs.

The $.05 per gallon disposal fee has not been increased since 1998. This fee is well below the current market rate. A Lake Shastina facility, temporary transfer station or direct haul to Anderson, would mean a minimum fee increase to $0.14 per gallon. Staff is recommending that the Board increase current disposal fees to $.10 per gallon. This will generate additional revenue to help off-set costs associated with construction of a new facility.

Since most homes maintain 1200 gallon septic tanks, approximately 1000 gallons of septage is collected for disposal per pump out. A $.05 increase in the existing fee will increase the cost to the septic business and consumer by $50 per 1000 gallons pumped.

Staff is requesting Board direction and authorization on the following issues.

- Authorize staff to return to the Board with an ordinance to increase the septage disposal fee.
- Authorize staff to pursue construction of a permanent facility at Lake Shastina. Staff will develop a conceptual project and initiate negotiations with Lake Shastina CSD to identify roles and responsibilities. If a joint partnership appears viable, staff will return to the Board to obtain authorization to hire a consultant to formalize the concept and evaluate project feasibility and construction costs.
- Authorize staff to pursue funding for the proposed project including but not limited to loans. Lake Shastina will need assurances that the County is willing and able to fund the project prior to investing time and resources in exploring further project development.
- Reaffirm the Board's commitment to cease intake of septage waste at the Montague facility effective November 2013.

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TERRY BARBER
DIRECTOR

STEPHEN PERLMAN, M.D.
HEALTH OFFICER

November 6, 2012

Mr. Roy O'Connor
California Regional Water Quality Control Board
North Coast Region
5550 Skylane Blvd, Suite A.
Santa Rosa, CA 95403

RE: **MONTAGUE SEPTAGE POND CLOSURE PLAN**

Dear Mr. O'Connor:

In May 1979 the Public Health Department entered into an agreement with the County Airport Director to use the existing evaporative pond as a septage waste disposal site. The quarter acre pond had previously served as a wastewater stabilization lagoon for the former U.S. Air Force Base. In June 1979, the North Coast Regional Water Quality Control Board reviewed and approved use of the site stating that "Disposal of septage waste will not, in our judgment, create water quality or nuisance odor problems. We have no objections to the proposal and will waive the reporting provisions contained in Section 13260(a) of the Porter Cologne Water Quality Control Act." (Letter attached) The County has used the facility to receive septage waste based upon this Regional Water Quality Control Board approval.

On May 22, 1979, the Siskiyou County Planning Director notified the Public Health Department that establishing the septage site was Categorically Exempt from CEQA. The exemption was supported by finding Findings and a Notice of Exemption was posted for 30 days in the County Clerk's Office. (CEQA letter attached)

Siskiyou County is aware that the existing Montague Septage Pond is unpermitted and does not meet current siting requirements. The Regional Water Quality Control Board has requested that the County review its septage waste management practices and cease use of the unpermitted facility.

As a matter of health and safety, the County must ensure that residents are able to economically pump and maintain their septic tanks. While the County prefers to have an in-County disposal option and has aggressively pursed a viable solution to accomplish this goal, lack of grant funding has prevented the County from building a replacement facility. The County remains committed to a solution that is the most economical for local septage haulers as well as waste generators.

The County Board of Supervisors has committed to closing the facility effective November 1, 2013. Effective October 31, 2013 the County will cease accepting waste at the facility. The County has provided local septage haulers with adequate time to assess their business model and respond to the pending closure of the County facility. The County intends to cooperate and assist local business operators as determined appropriate by the Board of Supervisors.

CLOSURE PROCESS

Excavation and Drying

The process of drying solids will commence in November 2013. Drying will include dewatering and decanting off as much liquid as possible by excavating a trench within the pond to divert all the liquid to the southeast corner. Effluent will be left to settle out additional solids and take advantage of evaporation.

During the summer of 2014, solids and impacted soil will be excavated from the pond. Excavation limits will be determined by visual inspection by the Director of General Services, Director of Environmental Health and Regional Water Quality Control Board representative, Roy O'Connor or his representative.

The existing pond is approximately 200' x 200' x 15' in size. In 2011, SHN Consulting estimated that the pond contains approximately 800,000 cubic feet of sludge. Approximately 100,000 wet tons of dried sludge will need to be dried and disposed of in an approved location.

The sludge will be screened of all plastics, garbage or and other inert debris prior to being transported from the pond to the northeast portion of the Siskiyou County Airport where it will be placed on an abandoned asphalt taxiway and dewatered in a drying bed. Transport of material from the site to the drying beds will be done in truck beds that are designed or retrofitted to prevent leakage of effluent. While the County may use its own equipment and staff, it is anticipated that excavation, transport and management of the drying beds will be done by a private contractor. The County will follow California Public Contracting Code.

A drying bed will be constructed using sand or sandbags and 5 mil plastic to create a twenty inch berm and containment area. The containment area will be constructed to secure the perimeter and prevent any effluent from migrating off-site. A 36" wide strip of 5 mil plastic will be wrapped around the sand or sandbags to prevent liquids from leaving the containment area. The sludge will be placed in the drying bed on impervious asphalt in rows no deeper than 12 inches thick.

The drying process will be accelerated by turning the sludge every seven to ten days depending on the outside atmospheric drying conditions. Other methods of turning the waste can be explored to optimize moisture evaporation.

Excavated Site

All sludge and impacted soil will be removed from the pond. If groundwater is encountered, further assessment will be conducted.

The excavation site may be left open as determined necessary to address any remaining effluent and sampling requirements. Remaining effluent will be subject to evapo-transporation

and will eventually be incorporated into the native soil backfill. The site will be re-vegetated to correspond to existing and surrounding ag uses. No erosion control measures are anticipated after planting.

Disposal

Excavated material will be dewatered, dried and tested as appropriate for land application. The waste will be sampled in accordance with EPA 503 Bio-Solids Regulations and land applied on adjacent county owned property. The County will work cooperatively with the North Coast Regional Water Quality Control Board to ensure that the waste is applied in a safe and appropriate manner. It is estimated that 10 acres will be required to apply the material at a rate of 10 tons per acre.

In the event land application is not feasible, the waste will be disposed of at the Dry Creek Landfill in White City Oregon. Sampling will be accomplished in accordance with the requirements of the disposal facility. Depending on the cost to dispose the material at Dry Creek Landfill, the County may be required to hold the material on site and dispose of it over a two or three year period.

Sampling

The bottom of the excavation will be sampled for the following constituents.

1) Total Nitrogen
2) Nitrogen as Nitrate
3) Indicators: Formaldehyde, Phenols, and Short Metal Scan for Cadmium, Chrome, Copper and Zinc.

The County will consult with the Regional Water Quality Control Board to determine future monitoring requirements.

CEQA

As noted above, construction/conversion of the lagoon to a septage receiving pond was determined to be exempt from CEQA. The Department has consulted with the County Planning Department and it anticipated that closure of the facility is exempt from CEQA pursuant to 15304(c) and 15304(g). CEQA requirements will be fully evaluated upon approval of a project description.

The County would like to thank your for your cooperative spirit and assistance in closing the facility. We look forward to completing the process in an expeditious and cost effective manner while protecting the environment.

Sincerely,
COUNTY OF SISKIYOU PUBLIC HEALTH &
COMMUNITY DEVELOPMENT DEPARTMENT

Terry Barber

Terry Barber, Director

PLANNING DEPARTMENT

TELEPHONE: 842-3531, EXTENSION 42

PLANNING DIRECTOR DAVID G. HEDBERG

County of Siskiyou

COURT HOUSE ANNEX

YREKA, CALIFORNIA

96097

PLANNING COMMISSION:

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SIDNEY MUMA

CLAES B. NILSSON

JAMES STEINHAUS

RWB 6/5/79

May 30, 1979

TO: Dr. Robert Bayuk, Siskiyou County Health Officer

FROM: David G. Hedberg, Siskiyou County Planning Director

RE: NOTICE OF EXEMPTION - Septage Disposal Facility at Siskiyou County Airport.

Dear Dr. Bayuk:

This letter will serve as a determination that the following project is considered to be categorically exempt from the provisions of the California Environmental Quality Act:

A. Project Description - (1) Establishment of an existing waste water stabilization lagoon previously used by the U.S. Air Force. (2) Construction of a small access road equal to 500 feet in length with a turnabout area for pumper trucks (total construction cost of $2,000.).

B. Project Location - The wastewater stabilization lagoons located at the Siskiyou County Airport north of Montague, California.

C. Findings - The Planning Director finds that the aforementioned project is exempt from the provisions of the California Environmental Quality Act as permitted in Article 8, Sections 15101(b)(c), 15102 and 15104(a) of the Guidelines For the Implementation of the California Environmental Quality Act of 1970.

D. Reason to Support Findings - The aforementioned project is merely the re-establishment and operation of a previously existing septage disposal facility and has received approval

by the North Coast Water Quality Control Board. The very minor road construction involved is being done to revitalize and reconstruct an existing access route to the wastewater stabilization lagoons by pumper trucks used solely in the operation of the facility.

E. Additional Finding - This NOTICE OF EXEMPTION will not apply to any expansion of the existing facility or the construction of any larger access road to the lagoons as described by the County Health Officer in the attached letter, ie. construction of any new wastewater stabilization lagoons and/or related facilities or the construction of any larger or additional access roads not previously described in the attached letter will be subject to a new environmental review process.

F. Public Notice - The NOTICE OF EXEMPTION will be posted for a period of 30 days in the County Clerk's office. (Section 15074(d).

Please contact me if I may be of further assistance to you.

Very truly yours,

David G. Hedberg

David G. Hedberg
Planning Director

DGH:kf

ROBT. W. BAYUK, M.D.
COUNTY HEALTH OFFICER
TELEPHONE 842-4198

COUNTY OF SISKIYOU
DEPARTMENT OF PUBLIC HEALTH

805 SOUTH MAIN STREET
YREKA, CALIFORNIA 96097

MT. SHASTA OFFICE
911 SO. MT. SHASTA
BLVD. 96067
TELEPHONE 926-4568

May 22, 1979

David Hedberg, Director
Siskiyou County Planning Department
Siskiyou County Courthouse
Yreka, California 96097

Re: Septage disposal facility - Siskiyou County Airport

Dear Mr. Hedberg;

The Health Department intends to establish a septage disposal facility at the Siskiyou County Airport north of Montague.

A wastewater stabilization lagoon that served the former U.S. Air Force Base will be utilized. The lagoon is more than adequately sized for such use and has been approved as a septage disposal site by the North Coast Regional Water Quality Board.

The project will encompass construction of a small access road equal to 500 feet in length with a turnaround area for pumper trucks. Anticipated project construction cost will be less than $2000.

This department seeks a categorical exemption to C.E.Q.A. since the proposed project will utilized existing facilities and will not have significant environmental effects.

Yours truly;

Robt. W. Bayuk, M.D.
Health Officer
SISKIYOU COUNTY HEALTH DEPARTMENT

RWB/yk

STATE OF CALIFORNIA—RESOURCES AGENCY

EDMUND G. BROWN JR., Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD—
NORTH COAST REGION

1000 CODDINGTOWN CENTER
SANTA ROSA, CALIFORNIA 95401
Phone: 707—545-2620

June 6, 1979

Mr. Terry Baker
Siskiyou County Health Department
806 South Main Street
Yreka, CA 96097

Dear Mr. Baker:

We have reviewed the proposed septage disposal site located at the Montague County Airport.

The disposal area is an abandoned waste treatment and disposal pond with dikes about eight feet high enclosing approximately ¼ acre. Disposal of septage wastes will not, in our judgement, create water quality or nuisance odor problems.

We have no objections to the proposal and will waive the reporting provisions contained in Section 13260(a) of the Porter Cologne Water Quality Control Act.

Sincerely,

William T. Rodriguez
Sanitary Engineering Associate

WTR:jmr

8

CALIFORNIA
Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

North Coast Regional Water Quality Control Board

November 30, 2012

RECEIVED
DEC 3 2012

Terry Barber
Siskiyou County Health Department
806 South Main Street
Yreka, CA 96097

Dear Terry:

Subject: Closure of the Septage Disposal Pond at the Montague Airport

File: Siskiyou County Montague Septage Facility,
WDID No. 1A11167RSIS

I received the Montague Septage Pond Closure Plan dated November 6, 2012, prepared by Siskiyou County, regarding the septage disposal pond at the Siskiyou County Montague Airport. Closure of the septage pond is scheduled for November 1, 2013. We concur with the plan, and the closure date.

The plan addresses the removal of solids from the pond and treatment and disposal of the removed material. Further groundwater investigation may be required following the completion of the solids removal.

I understand that you are pursuing grants to help fund the cleanup and investigation. If there is anything I can do to help support the funding request, please let me know.

If you have any questions or comments please call me at (707) 576-2670.

Sincerely,

Roy O'Connor

Roy O'Connor
Associate Engineering Geologist

121130_RRO_LTR_Montague

cc: Randy Akana, Siskiyou County Department of Public Works, 305 Butte Street,
Yreka, CA 96097

Montague Septage Pond Closure Plan Cost Estimate
November 28, 2012

The Montague Septage Pond, scheduled to be closed to receiving septage waste as of November, 2013, measures approximately 200' X 200' X 15' in depth. This equates to a volume of 600,000 cubic feet of wet sludge to be removed. SHN Consulting Engineers had estimated that the septage pond contained approximately 800,000 cubic feet of sludge. The cost estimate will be calculated utilizing the SHN estimate for the total volume of wet sludge to be removed. The plan calls for the removal of this sludge and transported a short distance to an abandoned paved taxiway located in the northeast area of the airport. The sludge will be spread out on this taxiway and allowed to dry throughout the summer of 2014. To accelerate drying of this material, the sludge will be turned every 10 days until moisture concentration is determined to be at least less than 50% by weight. Dried septage sludge will then be transported to adjacent lands surrounding the airport for land application in accordance with the Federal EPA 503 regulation for the land application of domestic sludge on non-public lands. Septage sludge will be spread onto agricultural land and disked into the top soil horizon to a depth of 4-6 inches. The septage pond following the removal of septage sludge will be filled in utilizing the existing soil berm surrounding the site. The final grade of the site will be slightly mounded to allow for settling. The backfilling of material will proceed in a manner in which larger sized rock and boulders are placed in the bottom of the pond and soil sized particles are utilized as cover material over the fill material. Waste concrete, piping and all other inorganic, manufactured waste will be removed and transported to the County's waste transfer facility off of Oberlin Road. Any excess soil will be removed and stockpiled on the airport grounds and utilized as needed by the Public Works Department as fill or topsoil material. A cover crop of dry land wheat grass will be spread over the final fill as an erosion control measure.

MEHODOLOGY

Equipment rental rates utilized the Department of Transportation Equipment Rental Rates (Effective April 1, 2012 through March 31, 2013).

Labor rates utilized were extracted from the General Prevailing Wage Determination made by the Director of Industrial Relations pursuant to California Labor Code Part 7, Chapter 1, Article 2, Sections 1770, 1773 and 1773.1. Based upon the location of the septage pond, Area #1 was utilized to determine the hourly rate and the Group Number was determined based upon the specific task to be preformed.
Estimates as to the number of hours to perform specific tasks was determined from a conversation with the County's Public Works Department. Estimates of loading times and truck turn around times were provided by the Public Works Department. The specific volume of the articulated trucks to be used to transport wet sludge to the drying bed was provided by a review of www.volvoce.com for the Volvo A35F Articulated Truck (copy enclosed).

The cost of equipment and supplies required to perform these tasks were provided through a review of various websites which sell these specific items (copies enclosed).

The cost of the sand required to construct the sludge drying bed was provided in a phone call to Mountain Ready Mix; a local provider of this material. The quote provided ($20.50/ton) included

delivery to the site. The estimate of the total amount of sand required was determined mathematically by the author of this cost estimate.

Seed costs were determined based upon a 2012 price quote provided from Cowley D&L, Inc. The application rate of 20 pounds/acre was their recommendation for an application rate for the mine reclamation of a mine located in the area.

Reclamation Tasks to be Completed in Accordance with the Approved Closure Plan

- Construct Drying Bed
- Excavate and Haul Wet Septage Sludge to the Drying Bed
- Dry Septage Sludge
- Backfill Septage Pond
- Sample and Land Apply Dried Septage Sludge per Title 40 CFR, Part 503

TASKS

Construct Drying Bed

Drying bed to consist of a lined sand berm around the perimeter of the drying bed. Liner will consist of a 6 mil plastic by six feet in width. The liner will be rolled out and sand will be deposited upon the first 2 feet of the inside edge of the liner. The liner will be folded over the sand and a layer of sand will be laid down along the inside of the berm in order to hold the plastic liner in place. The liner material comes in a 100 foot roll and a one foot overlap will be used between each section. This process will continue until the required area for the drying bed is contained on three of the four sides of the drying bed. The fourth berm will be left open as an access for the trucks into the site. This access area will be predetermined in the field prior to the start of construction of the drying bed. Upon completion of the deposition of sludge material, the forth berm will be constructed. Access to the bed for the purpose of turning this material will be necessary. A 12 wide soil bridge over the sand berm will be constructed to provide access to the bed with equipment to accomplish this task with compromising the integrity of the sand berm.

Given: Sludge to be spread to a depth of 12 inches.
800,000 cubic feet of sludge to be deposited
Area of drying bed equals 800,000 square feet
Total perimeter of the drying bed equals approximately 3,580 feet in length

Labor & Equipment: Cat 926 Loader w/ operator
2 general laborers
36 rolls of 6 foot wide by 100 feet long; 6mil black plastic
90 cubic yards of sand (delivered)
2 square point shovels

Cost Estimate

926 Loader @ $59.97/hr x 24 hours =	1,439.28
Loader operator @ $59.85 x 24 hours =	1,436.40
Laborer x 2 x $39.02 x 24 hours =	1,872.96
Square Point Shovel x 2 x $12.25 =	24.50

90 cubic yards of sand (delivered) =	2,500.00
36 rolls of 6mil black plastic @ $39 per roll =	1,404.00
Total Direct Cost=	**8,677.14**

Indirect Costs

Supervision (7%) =	607.40
Profit/Overhead (14%) =	1,214.80
Contingencies (10%) =	867.71
Mobilization (5%) =	433.86
Administrative Costs (15%) =	1,301.57
Total Indirect Costs =	**4,425.34**

Total Costs

Direct Costs =	8,677.14
Indirect Costs =	4,425.34
Total Cost =	**13,102.48**

Excavate and Haul Wet Septage Sludge to Drying Bed

The excavation of the septage pond will occur following a period of time during the spring and summer of 2014. The upper portion of the north berm of the pond will be removed to an elevation so as to continue to contain the wet sludge. This material will be stockpiled to the north of the pond. The pond's access ramp will be removed and stockpiled with the material removed from the berm. Wet sludge will be excavated and loaded onto dump trucks. This loaded material will then be hauled to the drying bed constructed at the north portion of the airport and spread to a depth of 12 inches. Upon the removal of a sufficient amount of wet sludge to the south of this north berm, any liquid ponding in this area will be pumped from a constructed sump to the southern portion of the pond. Once a sufficient amount of liquid has been removed, the remaining north berm will be removed and stockpiled. Excavation of wet sludge will continue in a southerly direction. Material from the stockpile will be utilized if necessary in order to maintain vehicle access within the septage pond site. The removal of wet sludge will continue until all of this material has been removed and deposited within the drying bed. A water truck will be utilized for both dust control and for road cleaning as necessary.

Given: 800,000 cubic feet of wet sludge to be removed (29,630 cubic yards)
Truck capacity is 26.8 cubic yards (1,140 total truck trips)
Wet sludge is 65 pound/ cubic foot
Estimated load and travel time to be 30 minutes
29,630 / 26 = 1,140 total trips @ 30 minutes/ trip = 36 days

Labor & Equipment:
2 Volvo A35F Articulated 35 Ton Dump Trucks w/ Drivers
Cat 325 excavator w/ a 3 cubic yard bucket and Operator
Cat D-8L Dozer w/ push blade w/ Operator
Cat 966D Loader
3" trash pump w/ 200' of discharge hose

Cost Estimate:

Volvo A35F Dump Truck x 2 x 8 hours/ day x 36 days @ $235.14/hr =	135,440.64
Cat 325 Excavator @ 8 hours/day x 36 days @ $104.23/hr =	30,018.24
Cat D-8L Dozer @ 2 hours/day x 36 days @ $186.18/hr =	13,404.96
Dump truck drivers (2) @ $50.65/hr x 8hours/day x 36 days =	29,174.40
Heavy equipment Operator @ $59.85/hour x 8 hrs/day x 36 days =	17,236.80
Cat 966D Loader @ $119.52 x 8hours/day x 36 days =	34,421.76
Loader Operator @ $59.85/hr x 8hours/day x 36 days =	17,236.80
3" Trash Pump =	1,549.99
200 feet of 3" discharge hose @ $199.99/100 feet x 2 =	399.98
3" x 20 ft Suction Hose =	124.99
3" Suction Strainer =	29.99
Total Cost =	**279,038.55**

Indirect Costs

Supervision (7%) =	19,532.70
Profit/Overhead (14%) =	39,065.40
Contingencies (10%) =	27,903.86
Mobilization (5%) =	13,951.93
Administrative Costs (15%) =	41,855.78
Total Indirect Costs =	**142,309.67**

Total Costs

Direct Costs =	279,038.55
Indirect Costs =	142,309.67
Total Cost =	**421,348.22**

Dry Septage Sludge to less than 50% by Weight

In order to accelerate drying time the sludge is to be turned every 10 days. It is anticipated that within two (2) months during the summer the sludge will reach a moisture content of less than 50% by weight. This would result in the turning of the sludge a total of five (5) times during this 60 day period.

Given: The plough width of an average reversible plough is 5 feet.
The estimated plough speed is 5 MPH
At 5' in width; the total distance to turn over 800,000 cubic feet of sludge one (1) foot in depth is 38 miles. 38 miles divided by 5MPH = 8 hours

Labor & Equipment: Farm Tractor (greater than 50 HP) w/ reversible plough
Farm Tractor Operator

Cost Estimate

Farm Tractor @ $35.41/hour x 8 hours x 5 days =	1,416.40
Tractor Operator @ 51.07/hr x 8 hours x 5 days =	2,042.80
Total Costs =	**3,459.20**

Indirect Costs

Supervision (7%) =	242.14
Profit/Overhead (14%) =	484.29
Contingencies (10%) =	345.92
Mobilization (5%) =	172.96
Administrative Costs (15%) =	518.88
Total Indirect Costs =	**1,764.19**

Total Costs

Direct Costs =	3,459.20
Indirect Costs =	1,764.19
Total Cost =	**5,223.39**

Backfill Septage Pond and Level with Surrounding Grade

Utilize dozer to backfill excavated septage pond with dike material which surrounds the pond. Final grade is to be slightly mound so as to account for settling. Inert material uncovered during this backfilling process is to be removed and hauled to the County's landfill. It is anticipated that this task will require two (2) days to complete.

Labor & Equipment: Cat 325 excavator w/ a 3 cubic yard bucket and Operator
Cat D-8L Dozer w/ push blade w/ Operator
10 yard Dump Truck w/ Operator

Cost Estimate:

Cat 325 Excavator @ 8 hours/day x 2 days @ $104.23/hr =	1,667.68
Cat D-8L Dozer @ 8 hours/day x 2 days @ $186.18/hr =	2,978.88
10 yard Dump Truck @ 2 hours/day x 2 days @ $59.31/ Hr =	237.24
Heavy equipment Operator @ $59.85/hour x 8 hrs/day x 2 days x 2 Operators =	1,915.20
Truck Driver @ $50.65/hr x 2hours/day x 2 days =	202.60
Landfill Dumping Fee @ 20 yards @ 200lbs/yd = 4000 lbs x $54/Ton =	108.00
Total Cost =	**7,109.60**

Indirect Costs

Supervision (7%) =	497.67
Profit/Overhead (14%) =	995.34
Contingencies (10%) =	710.96
Mobilization (5%) =	355.48
Administrative Costs (15%) =	1,066.44
Total Indirect Costs =	**3,625.89**

Total Costs

Direct Costs =	7,109.60
Indirect Costs =	3,625.89
Total Cost =	**10,735.49**

Land Apply Dried Septage Sludge

Once dried the sludge will be hauled to a nearby agricultural field for disposal. The sludge will be land applied by disking in to the native soil utilizing typical farming practices. Used plastic will be removed and recycled or disposed of at the County's transfer station. The taxiway will be hosed off using a water truck if determined necessary.

Given: Studies show that a 60 -75% reduction in total volume can be achieved utilizing a drying bed over a 22 day time period (AWWA "Nonmechanical Dewatering of Water Plant Residuals";1998). Utilizing a 60% reduction in the volume of sludge the estimated volume of dried sludge to be removed and land applied is 29,630 cubic yards of wet sludge x 40% = 11,852 cubic yards of dried sludge. This volume of dried sludge would result in 1,185 truck trips utilizing 10 yard dump trucks. Using an estimate of 20 minutes turn around time per truck, a truck would average 24 trips per day. Utilizing five (5) 10 yard dump trucks, this task could be accomplished in 10 days.

5 trucks @ 10 yards/trip x 24 trips/day/truck x 10 days = 12,000 cubic yards

Dump trucks would off load by dumping as they move through the agricultural field in continuous and adjacent rows. Off loading to a depth of 6 inches would require a field of 60 acres.

12,000 cu.yds. x 27 cu.ft./ cu. yd. = 324,000 cu.ft. @ a depth of 6 inches = 648,000 sq.ft.

648,000 sq.ft. @ 43,560 sq.ft./acre = 15 acres

Following the land application of the dried sludge a farm tractor would be utilized to disc the sludge into the native soil.

Labor & Equipment: Cat 966D Loader w/ Operator
Farm Tractor (greater than 50 HP) w/ disc and Operator
Four 10 yard Dump Trucks w/ Drivers
Water Truck w/ Driver

Cost Estimate:

Cat 966D Loader @ $119.52 x 8hours/day x 10 days =	9,561.60
10 yard Dump Truck @ $59.31/ Hr x 5 trucks @ 8 hours/day for 10 days =	23,724.00
Farm Tractor @ $35.41/hour x 8 hours x 1 day =	283.28
Heavy equipment Operator @ $59.85/hour x 8 hrs/day x 10 days =	4,788.00
Truck Drivers (5) @ $50.65/hr/driver x 8 hours/day x 10 days =	4,052.00
Tractor Operator @ 51.07/hr x 8 hours x 1 day =	408.56
Landfill Dumping Fee @ 30 yards @ 100lbs/yd = 3000 lbs x $54/Ton =	81.00
Water Truck @ $59.31/Hr. x 2 Hrs./day x 10 days =	1,186.20
Water Truck Driver @ 50.65/Hr x 2 Hrs./day x 10 days =	1,013.00
Total Cost=	**45,097.64**

Indirect Costs

Supervision (7%) =	3,156.79
Profit/Overhead (14%) =	6,313.67
Contingencies (10%) =	4,509.76
Mobilization (5%) =	2,254.88
Administrative Costs (15%) =	6,764.65
Total Indirect Costs =	**22,999.75**

Total Costs

Direct Costs =	45,097.64
Indirect Costs =	22,999.75
Total Cost =	**68,097.39**

Revegetate Disturbed Area of the Pond Site

The area of the pond site following backfilling operations will need to be revegetated per the Closure Plan. The site measures approximately 200' x 200' or about one (1) acre in size. Including the access road and areas disturbed for stockpiling during the closure operation; the total area to be revegetated will likely be on the order of 2 acres in size. The access road would be removed and topsoil laid down. Spread Oahe or Luna dry land wheat grass at 20 pounds per acre.

Labor & Equipment: Cat D-8L Dozer w/ push blade w/ Operator
Cat 966D Loader w/ Operator
10 yard Dump Truck w/ Operator
Landscape Laborer w/ seed spreader

Cost Estimate:

Cat D-8L Dozer @ 1 hour @ $186.18/hr =	186.18
Cat 966D Loader @ $119.52 x 1hour =	119.52
10 yard Dump Truck @ 1 hours @ $59.31/ Hr =	59.31
Landscape Laborer @ 39.02 x 8 hours =	312.16
Wheat grass seed @ $3.81/lbs x 20 lbs/acre x 2 acres =	152.40
Hand operated bag spreader @ $34.99 per unit =	34.99
Total Cost =	**864.56**

Indirect Costs

Supervision (7%) =	60.52
Profit/Overhead (14%) =	121.04
Contingencies (10%) =	86.46
Mobilization (5%) =	43.23
Administrative Costs (15%) =	129.68
Total Indirect Costs =	**440.93**

Total Costs

Direct Costs =	864.56
Indirect Costs =	440.93
Total Cost =	**1,305.49**

Cost Summary

Construct Drying Bed	13,102.48
Excavate and Haul Wet Septage Sludge to the Drying Bed	421,348.22
Dry Septage Sludge	5,223.39
Backfill Septage Pond and Level with Surrounding Grade	10,735.49
Land Application of Dried Septage Sludge	68,097.39
Revegetate Disturbed Area of the Pond Site	1,305.49
Total of Direct Cost =	**519,812.46**

A35F Specifications

A35F	Specifications
Engine	Volvo D13H
.. Rated output at	31,7 r/s (1900 r/min)
.... SAE J1995 gross	350 kW (469 hp
.... ISO 9249, SAE J1349 net	327 kW (438 hp)
.. Max torque at	20,0 r/s (1200 r/min
.... SAE J1995 Gross	1740 lbf ft
.... ISO 9249, SAEJ1349 Net	1729 lbf ft
Max. speed	35.4 mph
Load capacity	37.0 sh tn
.. SAE 2:1 heap	26.8 yd3
Net weight	64,000 lb
Gross weight	[illegible]

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S-11182	10 x 100'	44	43	41	20	1	ADD
S-13639	12 x 100'	57	54	52	23	1	ADD
S-14634	16 x 100'	74	72	68	31	1	ADD
S-11183	20 x 100'	85	83	78	40	1	ADD
S-14635	24 x 100'	103	100	96	46	1	ADD

6 MIL BLACK

MODEL NO.	SIZE W x L	PRICE PER ROLL			LBS./ ROLL	ADD TO CART	
		1	2	4+			
S-14636	6 x 100'	$42	$40	$39	18	1	ADD
S-13640	8 x 100'	57	53	52	22	1	ADD
S-11184	10 x 100'	66	64	62	29	1	ADD
S-13641	12 x 100'	79	77	74	35	1	ADD
S-14637	16 x 100'	109	103	100	46	1	ADD
S-11185	20 x 100'	134	129	124	58	1	ADD
S-14638	24 x 100'	166	160	153	69	1	ADD

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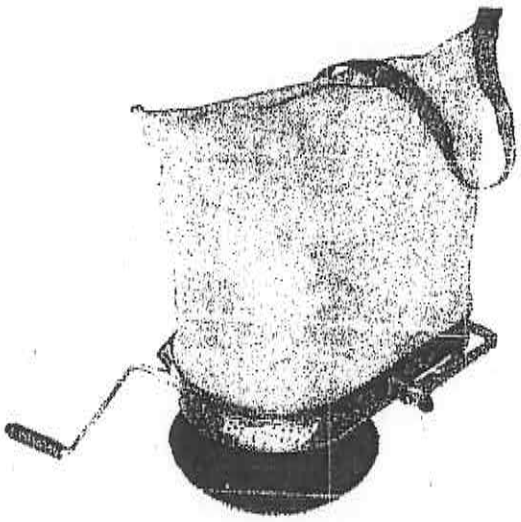

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High RPM gearbox

Mildew, water and tear resistant

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Wide shoulder strap

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Model 2750

KEY SPECS

Spreader Type	Handcrank broadcast
Load Capacity (lbs.)	7
Walk or Pull	Walk
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10 September 2012

To: Greg Gundlach

Regarding you request, Oahe or Luna dry land wheat grasses cost $3.81 per pound today and are usually planted at 20 pounds per are.

Carole J. Dreesman