

STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

STAFF REPORT FOR REGULAR MEETING OF MAY 9, 2008
Prepared on April 9, 2008

ITEM NUMBER: 21

SUBJECT: Santa Maria Class III Landfill, Santa Barbara County, Information Regarding the Nonhazardous Hydrocarbon Impacted Soils (NHIS) Program and the Threat of Flooding From the Santa Maria River.

KEY INFORMATION:

Location: Approximately one mile east of Santa Maria
Type of Waste: Non-hazardous municipal solid waste and hydrocarbon impacted soil
Disposal: Cell/Module fill method
Liner System: Former Active and Inactive areas are unlined;
Double Composite liner beneath Active Area
Existing Orders: Waste Discharge Requirements, Order No. R3-2007-0045

This Action: None - this status update is for information only

SUMMARY

The Water Board adopted Waste Discharge Requirements Order No. R3-2007-0045 (WDR) regarding the Santa Maria Class III Landfill (Landfill) on October 19, 2007. The Landfill is owned and operated by the City of Santa Maria (City). The Water Board adopted the WDR, but also directed staff to provide additional information to the Water Board regarding two issues associated with the Landfill: the non-hazardous hydrocarbon impacted soils (NHIS) program and the threat of flooding from the Santa Maria River. This staff report presents an update on the NHIS program and the threat of flooding from the Santa Maria River.

During the WDR renewal process, Water Board staff identified some deficiencies in the NHIS program. To address these deficiencies, Provision 17 of the WDR required that the City amend their NHIS Hydrocarbon Soils Management and Disposal Plan (NHIS Plan) to provide increased clarity, transparency, and quality control. In addition, the Executive Officer required the City to improve the Soil Construction Quality Assurance Report that documents their tracking of NHIS soils disposed at the Landfill. Since the Water Board adopted the WDR, the City has satisfactorily addressed the requirements of Provision 17 and their tracking of NHIS soils. Water Board staff will continue to monitor the NHIS program to ensure that it is protective of water resources.

A preliminary Federal Emergency Management Agency (FEMA) flood map indicates that the Landfill is susceptible to inundation and washout from a 100-year flood event from the Santa Maria River. FEMA intends to publish an updated draft flood map in September 2008, followed by the final flood map in early 2009. The City requests to defer the flood issue until after FEMA produces an updated draft flood map, when FEMA will accept comments on the map and more

accurate information will be available to assess the susceptibility of the Landfill to flooding. Staff concurs with the City's request.

DISCUSSION

The Water Board adopted WDR for the Landfill on October 19, 2007. Public comments associated with the WDR update stated that the non-hazardous hydrocarbon impacted soils program should be discontinued because of alleged disposal of hazardous soils and that the Landfill is under threat of flooding from the Santa Maria River. In response, as part of the WDR renewal, staff reviewed the NHIS program, including the NHIS management and disposal plan, and details of the soil acceptance and disposal. In addition, staff evaluated the potential for flooding at the Landfill. Staff concluded that the NHIS program needed improvement and the potential for flooding needed further investigation. Therefore, staff added provisions to its proposed WDR requiring the City to amend the NHIS management plan and evaluate the potential threat of flood.

NHIS Program

Background: With respect to water quality, the NHIS program serves the following purposes in our region: 1) provides a regulated disposal location for petroleum contaminated soils that are in direct contact (or threaten to contact) waters of the State, 2) provides generators of petroleum contaminated soils from oil well sumps, tank farms, pipelines, and spills with an economical remedial alternative as an incentive to remove impacted soil from the environment, and 3) serves as a foundation layer for the final cover system in the 118-acre "Closed Active Area" of the Landfill. In 2002, the Water Board required the cessation of municipal solid waste disposal in the Landfill to prevent or reduce further impacts to groundwater (despite being tens of feet short of permitted final grade). However, the City needed large volumes of soil to build the proper crown for drainage over the area. Therefore, the Water Board supported the Discharger's NHIS program to build the final cover system using a "rolling closure" process whereby in November of each year, portions of the area that reach final grade receive a final cover.

In response to public concerns that the NHIS program allows disposal of hazardous soils into the Landfill, staff conducted a detailed review of the City's Hydrocarbon Soils Management and Disposal Plan (NHIS Plan) and the Nonhazardous Hydrocarbon Impacted Soil Construction Quality Assurance Report, as well as soil generator profiles. The Quality Assurance Report is an annual report that provides documentation on the rolling final cover construction and NHIS materials used as the foundation layer. Staff also conducted field inspections of the NHIS operations on several occasions.

After review of the NHIS Plan, staff found that the requirements for soil characterization and reporting were unclear. As such, staff added Provision No. 17 to the proposed WDR requiring that the NHIS Plan be amended to include the following: 1) decision logic as to when generators use statistical or volumetric stockpile sampling methods, 2) description of soil characterization procedure outlined in EPA Method SW-846, and 3) requirements that generator's submitted soil profiles include maps showing soil stockpiles, excavations and sample collection locations, and description of collection methods and rationale for sampling procedures. The Water Board approved these requirements when it adopted the WDR in October 2007.

To further improve clarity and transparency in the NHIS program, the Executive Officer has required that the Quality Assurance Report provide summary tables documenting the City's

tracking of compliance with the NHIS soils acceptance criteria. The summary tables must include information on soil characterization, generator source, generator name, soil volume, sampling methodology, and documentation of City's inspections at soil source locations.

Update: As required by WDR Provision 17, the City submitted revised pages to the NHIS Management Plan on December 19, 2007. Staff subsequently provided comments on the revised plan and the City made the required changes in a revised report received on February 1, 2008. The revised NHIS Management Plan includes the following improvements:

- clarifies the number of samples required to characterize impacted soils using volumetric methods; includes an option to use statistically based characterization methods,
- specifies that generator must provide a sampling plan and rationale for sampling methodology,
- specifies that generator must provide origin of soil impacts (process knowledge),
- requires that generator submit soil profiles with figures showing extent of stockpile or excavation,
- requires that all laboratory analysis must meet required detection levels; detection levels must be clearly documented in the analytical data tables, and
- requires generator to document the qualifications of personnel preparing sampling plans and collecting samples.

Additionally, the NHIS Plan requires the generator to demonstrate that the soil is non-hazardous as defined by 40 CFR Part 261 and 22 CCR Article 11, Federal and State regulations, respectively.

The City also made improvements to the Quality Assurance Report for 2007 operations, submitted February 28, 2008. Improvements include easily reviewed tables summarizing sources of each NHIS soil profile (process knowledge), sample collection and soil characterization methods, logs of City's inspections of generator source locations, and results of random load checks.

Staff inspected the Landfill in November 2007 and January 2008, including installation of the NHIS foundation layer. During the November inspection, staff observed the installation of the final portion of NHIS bottom liner system over the Closed Active Area. Based on visual observation, the City installed that portion of the liner system according to approved plans and specifications.

As of December 2007, an additional six acres have received a final cover, and the City has completed the installation of the NHIS bottom liner system over the remainder of the Closed Active Area. This bottom liner system isolates the NHIS from underlying municipal solid waste and also acts as an interim cover for the municipal solid waste until the final cover system is completed. Therefore, the entire 118-acre Closed Active Area now has either a final cover or an interim cover system.

As intended by Provision 17 of the WDR, the City has made improvements to the NHIS program to improve clarity, transparency and quality control to ensure that hydrocarbon impacted soils accepted at the Landfill meet the acceptance criteria set forth to ensure that water resources are protected and hazardous waste laws are not violated. Furthermore, according to a recent Santa Barbara County Grand Jury report, the NHIS program is safe, legal and profitable to the City.

Flood Protection

Background: The Army Corps of Engineer's (COE) levee along the southwest side of the Santa Maria River was designed and constructed to contain a 500-year flood event and protect the City of Santa Maria, the Landfill, and surrounding areas from flooding. Following the Hurricane Katrina Disaster, the COE began an assessment of flood control structures throughout the United States to measure their risk of potential failure. After their assessment of the Santa Maria River levee in March 2006, the COE placed the levee on the nationwide list of levees at risk of failure and did not certify that it could withstand a 100-year flood. In response, the Federal Emergency Management Agency (FEMA) began preparing revised flood maps. Preliminary results of FEMA's effort appear to place most of the City, a large portion of the Santa Maria Valley, and portions of the Landfill in the 100-year flood zone. The revised flood map may lead to mandatory flood insurance for thousands of property owners, and result in the Landfill being out of compliance with California Title 27 and Federal regulations. Water Board staff's cursory review of the preliminary flood map indicates that portions of the landfill that are shown as flooded are actually higher than the anticipated high water elevations, indicating that the preliminary map may have errors.

Regulations require that if the landfill is susceptible to a flood having a 100 year return period, the Discharger must demonstrate how inundation or washout due to 100-year flood will be prevented, and how the landfill will not restrict the flow of the 100-year flood or reduce the temporary water storage capacity of the floodplain. Public comments alerted Water Board staff of this potential problem while Water Board staff drafted the WDR. This prompted staff to include Provision 11 in the WDR that required the City to demonstrate, by January 31, 2008, that the Landfill is in compliance with the above regulatory requirements. As of the preparation of this staff report, the City has not completed this requirement, for reasons discussed below.

Update: Water Board staff has obtained the following information through discussions with the City and from the City's website: <http://www.ci.santa-maria.ca.us/RiverLevee.shtml>. The Flood Control District of the County of Santa Barbara is the agency responsible for the condition of the levee; however, due to the gravity of the problem, the City has taken the initiative in urging County, State, and Federal leaders to make critical repairs to strengthen the levee. City and County staff as well as elected officials urged Federal Representatives to secure funding to enable the Army Corps to perform the necessary study to identify acceptable alternatives for levee repairs. As a result, Congress approved the funding, and on December 26, 2007, the \$555 billion Fiscal Year 2008 Omnibus spending bill (HR 2765) was signed, which includes \$280,000 for the Army Corps of Engineers to study ways to fix the levee.

The City has taken interim measures to protect the Landfill and City of Santa Maria from potential flooding. In response to the compromised Sisquoc River watershed caused by the 2007 Zacca fire, and concern for increased chance of flooding as a result, the City worked in conjunction with the County Flood Control District and Landfill staff to stockpile rock to assist in repairing a potential breach in the levee. In addition, while preparing for the 2007/2008 winter season, the City assisted in digging a channel down the center of the Santa Maria riverbed in order to direct storm flows away from the levee. This measure was effective in diverting and controlling the majority of flow caused by the early January 2008 rainfall (flow of approximately 11,000 cubic feet per second). Water Board staff photographed the channel during a January 11, 2008 post rainfall inspection of the Landfill, which indicates that some debris and sediment were carried by the surge in flow (see below). The levee was not compromised by recent flows.



January 11, 2008 photo of Santa Maria River channel, looking northeast from inactive area of the Landfill. Note flow debris and sediment; levee rip-rap in foreground.

FEMA has indicated that actual draft maps will not be released until September 2008. Mr. Brad Hagemann of the City indicated that the City will be provided an opportunity to comment on the draft map before the final map is released, which is anticipated around March 2009. Given that FEMA's flood map is preliminary; the Landfill is not out of compliance with State and Federal Regulations at this time. The City requested that they be allowed to postpone addressing Provision 11 of the WDR until after the draft flood map is published. Although staff is unable to change the due date in the WDR, at this time staff is not recommending formal enforcement regarding the City's noncompliance with Provision 11, based on the expectation that the City will promptly address Provision 11 once the final flood map is released.

If FEMA's draft flood map shows that the Landfill is susceptible to flooding, the City will procure the services of a registered civil engineer or equivalent to conduct a hydrology study assessing preventative measures needed to protect the Landfill. Staff's position, based on cursory review of topography at the Landfill, is that the primary risk to water quality from a flood is the potential for washout of municipal solid waste should the River erode into the bank of the levee. However, the City has successfully incorporated interim measures to channel Santa Maria River flows away from the levee.

CONCLUSION

The City has met the requirements of Provision 17 of the WDR via improving the NHIS program to increase clarity, transparency and quality control. This increases assurance that disposed hydrocarbon impacted soils meet the acceptance criteria set forth to protect water resources and ensure hazardous waste laws are not violated. Water Board staff will continue to monitor the NHIS program for compliance with acceptance criteria and the WDR.

The City will address the flood control issue when the draft FEMA map becomes available, scheduled for September 2008. At that time better information will be available to assess the susceptibility of the Landfill to a 100-year flood event. The City has taken interim measures to control stream flow in the Santa Maria River and protect the levee from potential erosion.

RECOMMENDATION

This item is for information only. Staff will proceed as described above unless directed otherwise by the Water Board.

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