



City of Grand Island

Tuesday, March 19, 2002

Study Session

Item -6

Update from CH2MHill on Sewage Sludge Handling Study at Wastewater Treatment Plant

The city council approved an agreement with CH2MHill of Denver, Colorado on December 4, 2001 to perform the study. The technology available to treat sewage, handle the associated sludge and eliminate the associated odors is constantly changing. CH2MHill is working with staff to study the plant, review the plant operations, identify operational & capital improvements, and work with staff to address odor concerns with the sewage sludge handling part of the plant operations.

Processes at the plant being reviewed include:

Dewatering process with Centrifuges and the belt press.

Grit removal.

Aerobic digestors.

Sludge Lagoon.

Compost Operation.

Grease handling.

Since the aerobic digestors, sludge lagoon and the compost operation are the plants largest potential contributors to odors, improvements to these operations will substantially reduce the odors coming from the facility.

A Pre-design report is planned for June. Plant improvements and modifications will then be scheduled and prioritized into the Wastewater Division's Comprehensive Plan. The first phase of improvements could be included in the fiscal year 2002-2003 budget.

Staff Contact: Steven P. Riehle, City Engineer/Public Works Direc



Odor Control Timeline

March 14, 2002

- 2/17/00** Letter from Betty Karle with observational lists of odors, times and dates
- 4/14/00** Council memo - CH2MHILL to perform odor assessment including a field visit, identification of point sources of odor, recommendations to reduce or eliminate odors
- 4/18/00** City Council Study Session focuses on odor control issue. Several concerned citizens speak encouraging resolution of the issue.
- 5/2/00** CH2MHill visits WWTP to gather background information regarding odors and odor complaints, tour and survey potential odor sources, take odor measurements and survey surrounding area for other potential odor sources
- 5/7/00** Report received from CH2MHill detailing observational data gathered, and offering odor reduction suggestions. Some immediate suggestions are implemented, with others to be budgeted later.
- 9/20/00** Odor Meeting is held at Dodge Elementary School. City agrees to establish an odor hotline that will allow people to report odor problems.
- 9/29/00** Odor Hotline is established allowing residents to call with complaints about odors
- 10/24/00** City Council passes Resolution approving appointments of Daniel Mora, Bud Jeffries, Dave Eastlack, Jay Henke, Ron Miller, Betty Karle, Councilmember Glenn Murray, Councilmember Fred Whitesides, Public Works Director Steve Riehle, Wastewater Superintendent Ben Thayer and ConAgra Plant Manager Ron Gould, to the Odor Committee
- 11/1/00** Tour of ConAgra and the City Wastewater Treatment Plant for Odor Committee members and media
- 12/5/00** First meeting of the Odor Committee. Ron Gould updated the committee on the construction at Con Agra. Ben Thayer reported progress on the three planned improvements at the WWTP to reduce the odors from the facility. Plans and specs for electrical improvements are close to complete so that advertisements for bids can be made. When the electrical improvements are complete there will be level controls on the sewage at the plant head works that will eliminate the waterfall and the odor associated with the waterfall. The consultant is working on the plans and specs for the aeration of the primary sludge storage tanks. The "Barrier" product will be used on the sludge holding lagoons when temperatures warm up next spring. Odor Intern Amanda Sutton presented the charts and graphs of odor hotline calls.
- 12/12/00** Report of Amanda Sutton, Public Works Department Intern to the City Council -a presentation on the background and creation of the Odor Hotline with charts and graphs of the hotline calls. Steps that have taken place at ConAgra and the Wastewater Treatment Plant to help eliminate odors were discussed. Ann Miller and Dan Mora spoke concerning the importance of continuing of the Odor Hotline.

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- 1/16/01** Odor Committee Meeting - The ConAgra Lagoon cover burst and had to be repaired. Ron will delegate press releases to someone so the public is still informed in the event that he is out of town. The roof is complete for the scrubber which will scrub air from the rooms before releasing it into the atmosphere. Once the electrical work is finished the scrubber will be on line. Wastewater Plant: Dave Eastlack was at the plant when the compost piles were being turned and indicated there was not much of an odor. If the barrier on the Sludge-Holding Lagoon does not work, the Plant will consider adding trees or a fence around the perimeter of the Lagoon for a windbreak.
- 2/20/01** Odor Committee Meeting - ConAgra: Ron Gould reported that the \$250,000 scrubber is in place and working. A supplemental concrete anchor device was constructed just outside the existing concrete. The supplemental anchor would be used to keep the lagoon tarp in place if the concrete anchor breaks again. WWTP: Ben Thayer reported that the "Barrier" product will be placed on the sludge holding lagoon in late April or early May. The advertisement for bids for the plant electrical improvements will go out on March 6, 2001. The electrical improvements will allow for adjusting the level of sewage in the wet well. This will eliminate the waterfall or cascading of sewage where it enters the plant. Work under this electrical modification project will probably take 9 months. Ben hopes to have the aeration and ferric chloride addition to the primary sludge holding tanks in place by September. Odor Hot Line: Charts and graphs were distributed which outline the number of calls per day, odor descriptions, and odor category.
- 3/6/01** The Public Works Department, Wastewater Division, advertises for bids for Electrical System Improvements at the Wastewater Treatment Plant.
- 3/20/01** The Survey Subcommittee of the Odor Committee meets to plan for a survey of residents in east Grand Island. The goal is to reach 300 people in September with a phone survey.
- 3/22/01** Plans and specifications for Electrical System Improvements at the Wastewater Treatment Plant have been sent to 22 planholders for review.
- 3/27/01** Bid Opening for Electrical System Improvements at the Wastewater Treatment Plant.

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- 4/4/01** The Survey Subcommittee of the Odor Committee meets to establish boundaries and draft questions for the survey.
- 4/10/01** The City Council awards the contract for Electrical System Improvements at the Wastewater Treatment Plant to Kayton Electric of Grand Island in the amount of \$953,046.00.
- 4/24/01** Odor Committee Meeting - group draws up the rules for the survey, also lays out a plan for visiting other communities to see how they handle odor issues.
- 5/1/01** Electrical System Improvements at the Wastewater Plant begin. Construction is expected to take 9 months.
- 5/8/01** Barrier product applied to sludge storage lagoon at Wastewater Treatment Plant.
- 5/21/01** Odor Committee Meeting - no ConAgra representative present. WWTP-Materials for the primary sludge holding tank aeration project have been ordered.
- 6/19/01** Odor Committee Meeting - ConAgra Capital plan includes replacement of single pass bone dryer with three-pass dryer. The group from Canada who prepared the lagoon cover came to inspect the cover. The new room air scrubbers are working well. If odor does occur, it is probably from the bone dryer. Field Trips- Betty Karle reviewed her written report - most communities reported little odor problems. Committee would like to know more about surveys done by CH2Mhill and what their proposals were. Dave Eastlack reported that odor complaints are coming to him from feedlots in the Capital Ave and Highway 281 areas. Concerned about Grand Island becoming unable to attract new businesses when entire community has odor issues.
- 8/21/01** Odor Committee Meeting -Steve Riehle was asked to comment on the CH2Mhill survey - reported that this survey did not use the most scientific measurements, instead focusing on more observational data. As a result, the survey was not continued. Some changes that were suggested have been implemented. ConAgra – reported that the triple pass bone dryer was approved as a capital expenditure and should arrive in about 13 weeks. Because this dryer uses lower heat, there should be less smell from the process. Wastewater Treatment Plant – The oxygen delivery system to the Primary Sludge Holding Tanks has been completed. The Ferric Chloride feed system to the Primary Sludge Holding Tanks will be complete by September 1, 2001. The barrier was applied to the lagoon in May and July, but will not be reapplied because Committee members did not believe it reduced the odors. Wastewater Treatment Plant staff are scheduled to begin injecting sludge into farm ground and emptying the lagoon on September 17, 2001.

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- 9/6/01** Odor Committee members receive survey data for phone survey of east Grand Island
- 9/25/01** Odor Committee Meeting - ConAgra Triple pass bone dryer is in the process of being constructed. Wastewater Treatment Plant - new aeration system is in, now staff is working on fine-tuning the ferric-chloride injection. Staff is also busy spreading compost and injecting sludge on agricultural land. Discussion of Odor Survey calls completed to date - Committee members agreed that the survey calls were quick and questions were easy to answer. Committee members decided to wait 6 months to do another survey.
- 10/15/01** The Public Works Department, Wastewater Division advertised for proposals for furnishing Consulting Engineering Services related to solids handling.
- 10/16/01** Steve Riehle presents Odor Survey data to the City Council at a Study Session. Betty Karle thanked those people involved and suggested covering the sludge lagoon and moving the compost pile outside of the residential area. Ron Miller stated that he felt the smell was getting a little better since the committee had been formed. Steve Riehle stated that both the Waste Water Treatment Plant and ConAgra emit odors. Dave Eastlack spoke concerning the efforts that are being taken by all parties. Ron Gould, General Manager of ConAgra, stated the improvements that had been done at ConAgra to help solve the odor problem.
- 11/19/01** Deadline for proposals for furnishing Engineering Services related to sewage sludge handling.
- 12/4/01** The City Council approved Agreement with CH2M Hill for Engineering Consulting Services for Review of Sewage Sludge Handling and Disposal Methods in the Amount of \$73,800.00.
- 3/19/02** City Council Study Session - engineering consulting firm CH2M Hill will make a presentation to the Council on their study of sewage sludge handling and disposal.