GW-054

Wingate Fractioner BGT Retrofit Proposal

DATE:
08.02.12

ConocoPhillips

Gas Activities – Gathering & Processing
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Sr. Staff Environmental Technologist
P.O. Box 2197
Houston, TX 77252
832-486-2887 Fax 832-486-6479

GW-054
4

FedEx: 845 6911 7883

August 2, 2012

Oil Conservation Division
Energy Minerals and Natural Resources Department
Mr. Glenn von Gonten
1220 South St. Francis Drive
Santa FE, NM 87505

RE: Wingate Fractionator Below Grade Tank Retrofit Proposal

Mr. von Gonten,

Enclosed you will find the Wingate Fractionator Below Grade Tank Retrofit Closure report in paper and electronic compact disk format. This report outlines the activities taken to retrofit the facility below grade tank. The retrofit was completed on June 8, 2012. A small leak was detected from the primary liner around the main inlet pipe. A successful repair of this leak was completed on July 23, 2012.

Do not hesitate to call me should you have questions on the report or any of the work performed.

Sincerely,

Beverly J. Cox

Enclosure: paper and CD

cc: Sherry Timmerman –Wingate Fractionator
Scott Mansell – Project Engineer (electronic format)
Beverly Cox – Houston Environmental Project Support

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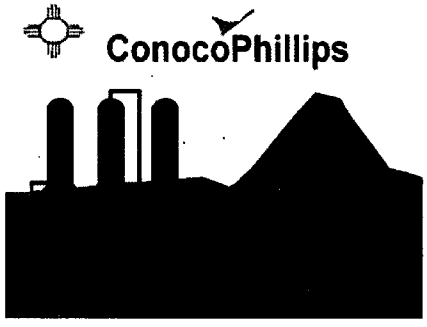


Wingate Fractionator
68 El Paso Circle
(PO Box 119, Rehoboth, NM 87322)
Gallup, NM 87301

Wastewater Below Grade Tank Retrofit Closure Report Outline

Ground Water Discharge Plan – GW 54

Wingate Fractionator Below Grade Tank
Closure Report

The retrofit project of the below grade tank (bgt) at the Wingate Fractionation Plant, Gallup, New Mexico was conducted the week of June 8, 2012. The project started on Monday, June 4, 2012 and was completed on Friday, June 8, 2012. Additional leak detection planning and testing continued through July 23, 2012.

The appendixes are configured to cover a specific task from start to finish. Each photo is labeled with the appendix prefix, letter and photo number sequence. Example: Appendix A-1 (first photo in appendix A), Appendix B-4 (fourth photo in appendix B), etc. Each Appendix Title is linked to the specific Appendix location.

Pre work consisting of physically isolating/severing (blind flanged) the three inlet pipe and severing the old out of service piping was conducted. Excavation next to the east wall of the bgt was conducted to reach the primary inlet line. Excavation was approximately 10-feet deep and the sides were shored, stabilized and barricaded so that the open hole would not present a hazard. **(Appendix A)**

Below is a summary of the bgt retrofit daily activities:

June 4, 2012

1. Equipment for the project was brought on site, staged and set up.
    a. Riley Industries performed the retrofit work, Total Safety provided the confined space entry (CSE) rescue team and ConocoPhillips performed the onsite safety and environmental supervision.
2. Job Safety Analysis (JSA), Lock out Tag out component review/witness and CSE monitoring was performed prior to work and entry into the bgt.
3. The walls, floor and internal pipe were washed with high pressure water to remove any scale or build up. **(Appendix B)**
4. All waste from this rinse was sent to the evaporation ponds.
5. Various small cracks, pitting of the cement and scale build up on the walls were observed. Some cracks have sealant. No signs of seepage on the walls or floor.
6. The bgt was forced air dried while blasting media and equipment was prepared. A exhaust fan was set up to suck out dust from the sand blasting and to keep air circulating thru the bgt.
7. The bgt walls, floor and extruding pipes were sand blasted to remove loose concrete, scale and to etch the surface. **(Appendix B)**
8. A large area of scale was removed by the sandblasting work and a slight weep was detected. This area was cleaned, a sealant applied and filled with cement. **(Appendix C; C1 & C2)**
9. Spent blasting media was vacuumed up and placed in a 55 gallon drum. The media will be sampled and disposed of per OCD guidance.
10. Area was secured for the night.

June 5, 2012

1. Job Safety Analysis (JSA), Lock out Tag out component review/witness and CSE monitoring was performed prior to work and entry into the bgt.
2. An old out of service line in the NW corner leaked back rinse water from the previous day. Prior to the start of the project this line was detached/severed several feet away

from the bgt. The protruding portion of this line will be cut flush with the wall and sealed during the cement patch phase of the project. **(Appendix C; C3 & C4)**
3. Started filling in the pitting areas and cracks with cement.
4. Cement floor installers performed inspection of floor and found that the high point of the floor was at the designed low point. The designed was reversed and the low point of the sump will now be on the SW corner (opposite of the original design low point). The switching of the low point area does not affect the construction of the project. The new drawing is located as **Appendix J**.
5. Using the NE corner of the sump floor as the high point, the floor was framed out with the slop going to the SW corner. **(Appendix C; C7 & C8)**
6. Cement was applied by hand and leveled to the framing. One diagonal side was poured and allowed to set up; then he other diagonal side was poured and allowed to set up. **(Appendix C; C6-C8)**
7. All cracks, pits, and wallow areas around the inlet pipes were filled with cement. **(Appendix D & E)**
8. Area was secured for the night.

June 6, 2012

1. Job Safety Analysis (JSA), Lock out Tag out component review/witness and CSE monitoring was performed prior to work and entry into the bgt.
2. All old piping was cut off flush with the wall, rebar steps were cut off and the rusted bottom portion of the main discharge pipe was cut off. All sharp edges were grinded down. All old cement protrusions were chipped off.
3. Half moon arches were cut out of two sides of bottom of the 4-inch square tubing pipe. This arch will allow liquid to flow into the pipe which will be positioned in the corner of the low point (SW corner). **(Appendix G; G1 & G2)**
4. More divots and anomalies were filled in with cement. Areas around the pipe were filled with cement. **(Appendix D)**
5. Scaffolding was erected to perform the final sand blasting. All walls and floor was sand blasted to prepare for the sealant.
6. The 4-inch square tubing that will be used for monitoring of leak detection was sand blasted.
7. Area was secured for the night.

June 7, 2012

1. Job Safety Analysis (JSA), Lock out Tag out component review/witness and CSE monitoring was performed prior to work and entry into the bgt.
2. Scaffolding was removed from the bgt.
3. Spent blast media was vacuumed and placed in the 55 gallon drum with the other spent blast media.
4. Applied the VF20 sealant to approximately 10-15 mils thick. Let VF20 set up for approximately 2 hours until tacky.
5. Applied VF380 for secondary liner to walls and floor. **(Appendix F)**
6. Applied extra coating to the surface around all pipes. **(Appendix D & E)**
7. Applied VF380 to the 4-inch square tubing pipe. **(Appendix G; G3)**
8. Started installation of the Terra Drain system.
    a. Cut Terra Drain sheets to size and starting installing. **(Appendix H)**
    b. Terra Drain is delivered as a roll of material that is approximately 3-foot wide. The length is cut according to the measurements taken inside the bgt.
    c. The Terra Drain is then dry fitted to the wall.

d. The bottom quarter section of the Terra Drain is lifted and rolled upward allowing the wall to be sprayed with VF380.
e. The bottom quarter is then rolled back down onto the wet VF380 and pressed into place.
f. The rest of the Terra Drain sheet is rolled down until the area of tackiness is identified on the lower quarter section.
g. Approximately 1.5 feet of the wall is sprayed with VF380 and then covered with the Terra Drain and pressed into place. This is repeated until the entire length of the Terra Drain is installed. NOTE: VF380 becomes tacky at approximately 48 seconds; therefore small sections of Terra Drain are secured in place before moving to another section.
h. The edges of the joined Terra Drain is covered with geotextile material and adhered to by VF380.

9. The 4-inch pipe was installed into the pre-cut hole in the top of the bgt. **(Appendix G)**
   a. Geotextile material was installed to cover the space between the pipe and wall. The entire length of the pipe and wall was then encapsulated with VF380.
   b. The Terra Drain was then installed butting up against the corners of the pipe. Geotextile material was installed covering the edges where the drain system meets the pipe. **(Appendix H; H9 & H10)**
10. The area was secured for the night.

June 8, 2012

1. Job Safety Analysis (JSA), Lock out Tag out component review/witness and CSE monitoring was performed prior to work and entry into the bgt.
2. Completed installing the Terra Drain; fitting around the piping and on floor. **(Appendix H)**
3. All Terra Drain joints and open edges at the top was covered with geotextile material and sprayed with VF380.
4. The entire drain system was sprayed with VF380 (walls and floor) encapsulating the Terra Drain and up the wall, sealing the drain to the wall. The primary liner of VF380 was applied to approximate 80 mils thick. **(Appendix I)**
5. An evaluation of the completed liner system was conducted and determined and extra layer of protection would be added directly under the discharge of the primary wastewater line and the transfer pump suction line. Two steel plates approximately 3/16-inch thick was cut and the surfaces were roughed up to prepare the surface for VF380 application. These two plates will be positioned directly below the pump suction and the discharge of the primary wastewater line. **(Appendix I; I7 & I8)**
   a. The steel plates were positioned and sealed in place with VF380 on the top and bottom sides.
6. The VF380 was allowed to set up for approximately 1 hour.
7. The liner was visually inspected for pin holes and over/under spraying.
8. The sump was filled up with fire fighting utility water. Approximately 1 hour later the space between the liners was inspected and no water was found.
9. The cement top surface gap surround the 4-inch pipe was filled and sealed.
10. The 4-inch pipe top was secured / sealed off with plastic.
11. The area was secured and the contractor racked up equipment in preparation to move off location.

June 11, 2012

1. The plastic was removed from the 4-inch pipe and the space between the liners was gauged. Approximately 1.5 inches of water was detected between the liners.
    a. A phone call was placed to Brad Jones, OCD, and a message was left.
    b. An attempt to collect a sample was made but was not successful.
2. The potential reasons for the water were evaluated.
    a. A level of 1.5 inches of water was detected in-between the liners verses the 3-foot level of water inside the bgt. If there was a leak, then the level between the liners should be at the level in the bgt.
    b. The surface opening of the 4-inch pipe was sealed off with plastic from Friday, June 8th until Monday, June 11th. The sealing of the pipe restricted air flow thus potentially contributing to condensation build up.
    c. The water entering the bgt is hot verses the cool space between the liners and the ground temperature.
    d. It is highly probable that condensation would occur given the facts listed above.

June 12, 2012

1. A follow up phone call was placed to Brad Jones in addition to an email notifying him of the water that was found between the liners.
2. Upon discussion with Brad Jones, we feel that the liquid between the liners is a result of condensation.
3. A follow up email was sent to Leonard Lowe, OCD, copying Brad Jones and ConocoPhillips personnel capturing our phone conversation.
4. A vent cap was installed on the top of the 4-inch pipe at the surface.

June 13 - 20, 2012

1. The water between the liners was removed on June 13th.
2. The bgt liner space was inspected daily and no liquids were found.
3. A follow up email was sent to Leonard Lowe and Brad Jones updating the activities that have occurred and that no liquids have been detected since June 13th. Also stated that monthly monitoring will start in July.

June 26, 2012

1. A decision was made to conduct another leak test on the below grade tank.
    a. The space between the liners was checked and no fluids were found. During normal operation the tank maintains an approximate 3-foot level of water.
    b. The tank was then filled to a level of approximately 10-feet which is above the liner overlap and top of the Terra Strip Drain system.
    c. The high level was maintained for approximately 1-hour and the space between the liners was inspected again and no water was detected.

June 27, 2012

1. The space between the liners was inspected and liquid was found.
2. Notification was made to the State regarding the leak test that was performed and the liquid that was found between the liners.
    a. The bgt normal operation water level is approximately 3-feet. Since the tank has been back in operation from the retrofit, no leak has been detected during normal operation conditions.
    b. The leak has only occurred when the water is raised to a high level. It is undetermined if there is a true leak or if the water is condensation caused by the

temperature change from the normal operating water temperature and the cold water that is introduced into the tank to raise the level.

c. The facility will continue to operate at the normal water levels until another leak test is defined. Research is being conducted to determine a more accurate test to determine a true leak versus condensation.

June 29, 2012

1. Notice to the State was emailed regarding the contingency plans for the tank operation until a resolution can be determined.
2. The tank will be operated at an approximate 3-foot level. The space between the liners has been hydrovac'd to remove the fluid.

June 30 – July 15, 2012

1. The space between the liners was periodically monitored and no liquids detected. The liquid was maintained at an approximate 3-foot level during this time.
2. Discussions with Riley Industries continue to develop an accurate leak detection process.
1. On July 9, 2012, a meeting with Riley Industries was conducted to review the leak detection method.
2. Testing method will consist of:
    a. The tank will be filed up with water.
    b. A food grade dye will be added to the tank.
    c. The level will be held from approximately 1-hour.
    d. The space between the liners will be inspected for dyed liquids.
3. Ensure the bgt will continue to operate at the normal 3-foot level until test is completed.

July 16 - 17, 2012

1. The bgt was filled to approximately 10 feet and dye was added.
2. The water level was maintained for approximately 1 hour.
3. The space between the liners was check and no liquid was found. The next day the space between the liners was check again and a small amount of dyed water was found.
4. Preparation for repair started.
5. The repair will occur on Thursday, July 19, 2012.

July 19 - 20, 2012

1. The bgt was drained and area prepared for entry.
2. The liner was inspected and questionable area was found around the main 6-inch inlet pipe.
3. The area around all pipe entering the tank was built up by spraying several thick layers of VF 380.
4. Another layer of VF 380 was sprayed from just below the inlet piping to above the overlap of the top section of the Terra Drain.
5. The tank was filled within 10 feet of the top.
6. The water was held for 12 hours.
7. The space between the liners was inspected and found dry.
8. The tank was returned to normal operation on Friday afternoon.

July 23-27, 2012

1. The space between the liners was inspected and no liquids were found. The liner has had a successful repair.
2. Notification of successful repair was made to the State via email on July 25th.
3. Preparations have started to back fill the excavated area on the east side of the bgt.
4. Monthly monitoring of the space between the liners will start in August 2012.

Appendix A

Excavation of SE Sidewall

Appendix A
Excavation – BGT SE Sidewall

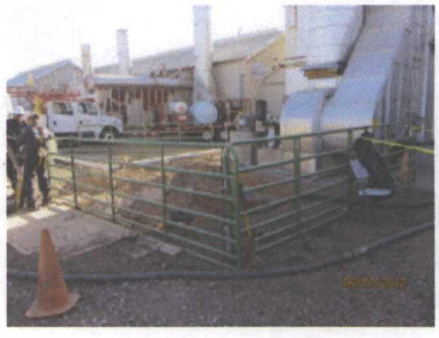
A1

A2

A3

A4

A5



A6

Appendix B

Water Rinsing and Sand Blasting

Appendix B
Water Rinsing and Sand Blasting

B1

B2

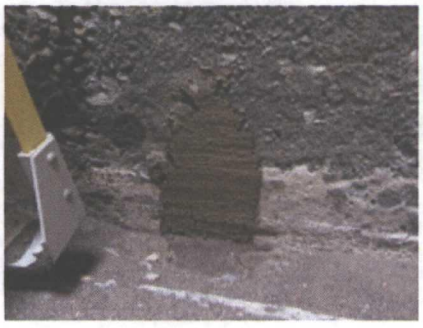
B3

B4

Appendix C

Cement Repairs and Floor Installation

Appendix C
Cement Repairs & Floor Installation



C1

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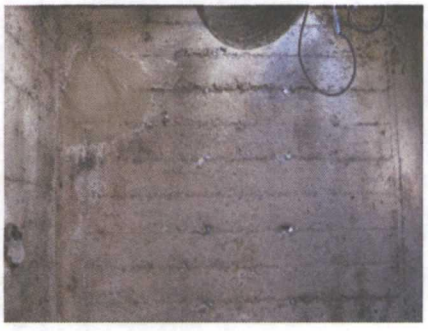


C5

C6

C7

C8

Appendix D

Grey-Black Water Inlet Pipe Repair and Coating

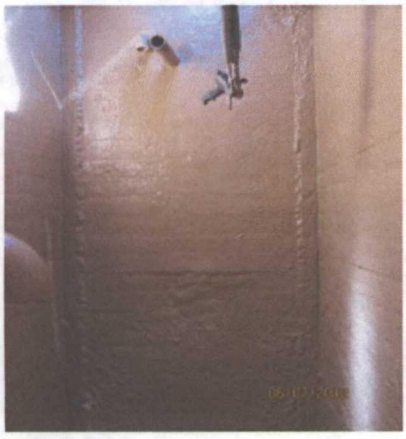
Appendix D
Grey-Black Water Inlet Pipe Repair, Fill and Coatings

D1

D2

D3

D4



D5

Appendix E

Primary Wastewater Inlet Pipe Repair and Coating

Appendix E
Primary Wastewater Inlet Pipe Repair, Fill and Coatings

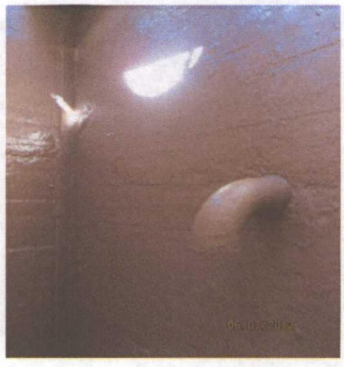
E1

E2

E3

E4

E5



E6

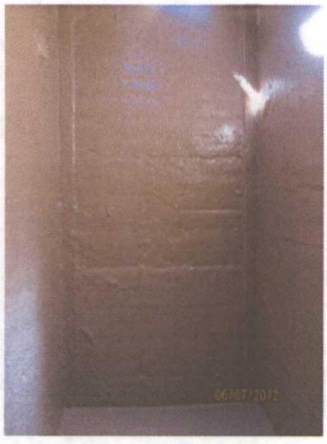
Appendix F

Secondary Liner Installation

Appendix F
Secondary Liner Installation

F 1

F 2



F 3

F4

F5

Appendix G

Monitoring Pipe Installation

Appendix G
Monitoring Pipe Installation

G1

G2

G3

G4

G5

G6

Appendix H

Terra Drain System Installation

Appendix H
Terra Drain System Installation

H1

G2

H3

H4

H5

H6

H7

H8

H9

H10

Appendix H – pt2
Terra Drain System Installation

H11

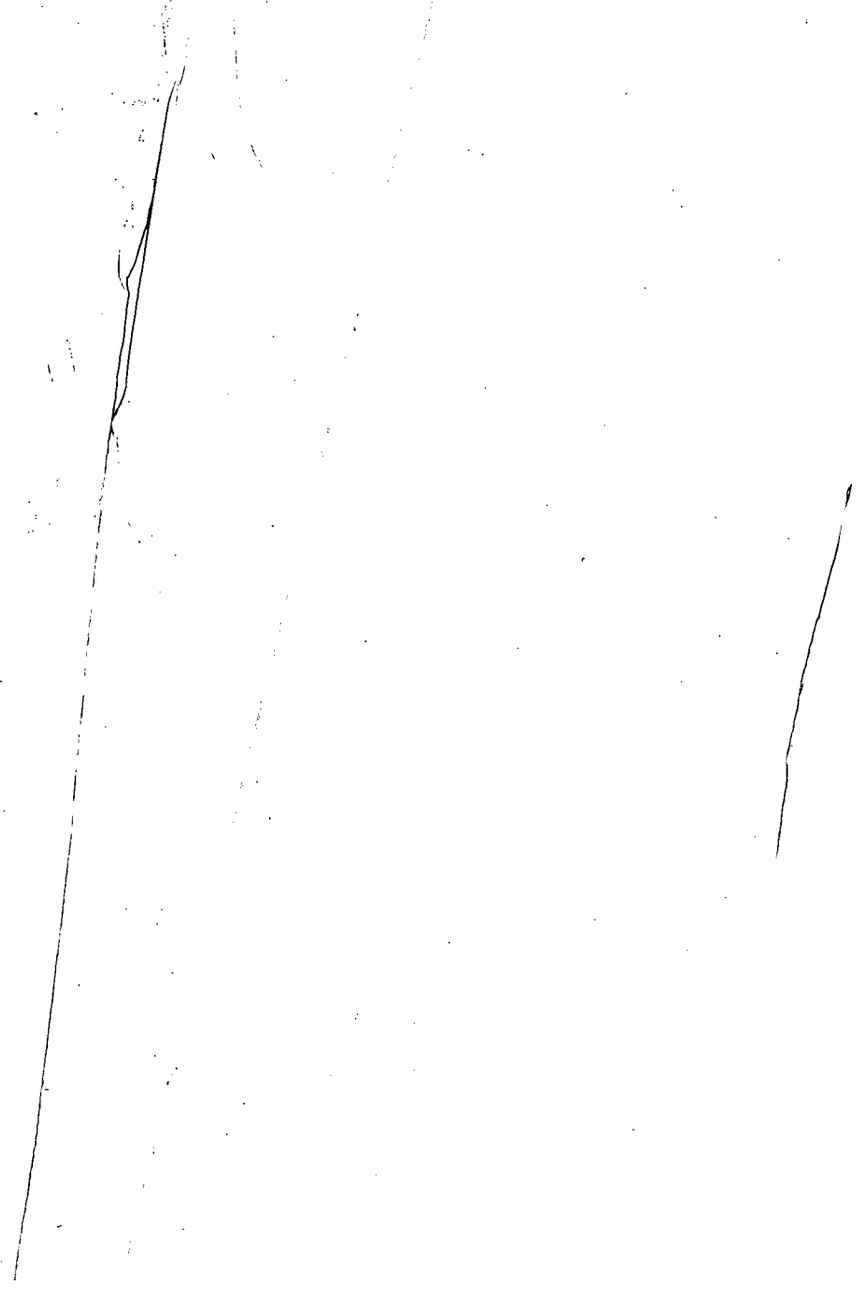
H12

H13

H14

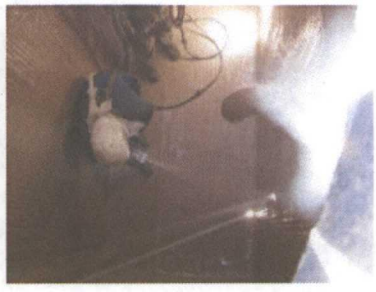
Appendix I

Primary Liner Installation and Metal Plates



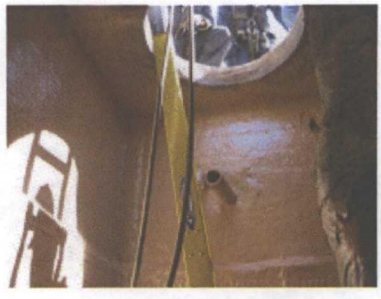
Appendix I
Primary Liner Installation & Metal Plates

I1



I2

I3



I4

I5

I6

I7

I8

I9

I10

Appendix J

Below Grade Tank Drawing

Appendix J
Below Grade Tank Drawing