



Region 6 Compliance Assurance and Enforcement Division
INSPECTION REPORT

Inspection Date(s):	08/16/2017		
Media:	Water		
Regulatory Program(s)	Clean Water Act		
Company Name:	Allied Chemical (Honeywell International, Inc.)		
Facility Name:	Allied Chemical Corporation		
Facility Physical Location:	5525 Hwy 3115,		
(city, state, zip code)	Carville, LA 70721		
Mailing address:	P.O. Box 226		
(city, state, zip code)	Geismar, LA 70734		
County/Parish:	Ascension Parish		
Facility Contact:	Jason Ayres	HSE Manager	
	225-642-3570		
FRS Number:			
Identification/Permit Number:	LA0006181		
Media Number:			
NAICS:	325180		
SIC:	2819		
Personnel participating in inspection:			
Michael Williams	EPA / 6EN-WMH	Inspector	281-983-2150
Reed Nuss	LDEQ	Inspector	225-219-3030
Margaret Parker	LDEQ	Inspector	225-219-3030
Lou Allen Hernandez	Allied	HSE Spec.	225-642-3570
Todd Harter	Allied	Sr. Environmental Spec.	225-642-3570
EPA Lead Inspector Signature/Date	MICHAEL WILLIAMS D:\1014\peters\MICHAEL WILLIAMS DN: c=US, o=U.S. Government, ou=EPA, ou=Staff, cn=CAROL PETERS- WAGNON, email=peters@epa.gov		
	Michael D. Williams		Date
Supervisor Signature/Date	CAROL PETERS-WAGNON Digitally signed by CAROL PETERS-WAGNON DN: c=US, o=U.S. Government, ou=EPA, ou=Staff, cn=CAROL PETERS- WAGNON, email=peters@epa.gov Date: 2018.08.16 10:30:37 -0500		Date

Section I - Introduction

PURPOSE OF THE INSPECTION

EPA Region 6 inspector, Michael Williams, arrived at Honeywell International at 8:59 am on August 16, 2017 for an unannounced inspection. I was accompanied with LDEQ, Reed Nuss and Margaret Parker. We met with Todd Harter, Sr. Environmental Specialist. I presented my credentials to Mr. Harter and informed him that this was an EPA lead inspection to determine compliance with the Clean Water Act. The scope of the inspection was with permit LA0006181 and facility operations and maintenance under the Clean Water Act.

The information presented in this report is based on the materials and information supplied by Honeywell International, representatives (the permittee), observations made during the inspection and records and reports maintained by the permittee.

FACILITY DESCRIPTION

Honeywell International is located at 5525 Highway 3115, Carville, Louisiana. The plant formally known as Allied Chemical was constructed in 1965. The plant produces Hydrofluoric Acid. The wastewater is primarily storm water that is collected within each process unit, parking lots and surrounding area. The process wastewater generated is hard piped and monitored for pH on a continuous basis. Treatment is to adjustment pH with a lime slurry prior to discharge. The site discharges to Mississippi River as permitted in LA0006181.

Section II- Observations

This inspection revealed the following observations:

- The site had a major acid release in August 2016. It occurred during a major storm that was greater than a 25yr/24hr rain event for the area. The storm caused the plant to exceed the design capacity of the containment dike for the sulfuric acid tank. (Please see Appendix 1)
- In the last 10 years there has not been any major permit exceedances from the permitted outfall.

Section III- Areas of Concerns

This inspection revealed the following areas of concerns:

Under Section C Monitoring and Records of their permit, the monitoring results must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in their permit.

- Honeywell uses Pace Analytical to do all the compliance testing for permit requirements. Honeywell should include in all analysis that are performed according to EPA approved methods listed in CFR 40 part 136
 - Honeywell takes a grab samples at the discharge point in addition to the compliance sampling sent to Pace Analytical. The additional samples analyzed should be included in their reportable data when perform according to approved methods.
 - The previous sample results not included did not exceed their permit limits.

Section IV – LIST OF APPENDICES

- Appendix 1 – Honeywell International Release Report

Appendix 1

Honeywell International Release Report



Performance Materials and Technologies

Honeywell
P. O. Box 226
Geismar, Louisiana 70734

October 18, 2016

Certified Mail Receipt Number: 7012 0600 0000 4995 6136

Louisiana Department of Environmental Quality
Post Office Box 4312
Baton Rouge, Louisiana 70821-4312
ATTENTION: OFFICE OF ENVIRONMENTAL COMPLIANCE – SPOC
"UPDATED UNAUTHORIZED DISCHARGE NOTIFICATION REPORT"

RE: Updated Unauthorized Discharge Notification Report
Incident Number: 16-03395 and SPOC # HPH6 15704 and G0V6 15760
Agency Interest Number: 2082
Honeywell International Inc., Geismar, Louisiana

Dear Sir or Madam:

This letter is to provide updated information that was not available within 7-days after the 3 incidents that occurred at the Honeywell Geismar Facility that were in part due to the historic amounts of rainfall received at the site between August 11th and 14th, 2016. The SPOC notifications (SPOC # HPH6 15704 and G0V6 15760) were related to overtopping of the site containment systems and Incident # 16-03395 involved a release of a Sulfuric Acid (CAS# 7664-93-9) and Oleum (CAS# 7664-93-9 & 7446-11-9) from the Hydrofluoric Acid Plant at the Honeywell Geismar Facility on August 13, 2016 at 10:00 hours. There were no fatalities or documented injuries or hospitalization as a result of the incidents referenced above.. Updated details of the releases are included in the attached Written Response Form, as required by LAC 33:I.3925 and/or LAC 33:V.10111.H

Honeywell is committed to operating the Geismar Facility in a safe and environmentally protective manner at all times. Should you have any questions regarding this submittal or require additional information please contact Jason Ayres of my staff at (225) 642-3570 or by email at h.jason.ayres@honeywell.com.

Sincerely,

Casey Smithhart
Plant Manager

CS/mjl



Performance Materials and Technologies

Honeywell
P. O. Box 226
Geismar, Louisiana 70734

October 18, 2016

Certified Mail Receipt Number: 7012 0600 0000 4995 6129

Department of Public Safety and Corrections, Office of State Police
Emergency Services Unit
Transportation and Environmental Safety Section
P.O. Box 66168, A-16
Baton Rouge, LA 70896

Attention: Hazardous Materials

RE: Updated Unauthorized Discharge Notification Report
Incident Number: 16-03395 and SPOC # HPH6 15704 and G0V6 15760
Agency Interest Number: 2082
Honeywell International Inc., Geismar, Louisiana

Dear Sir or Madam:

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Honeywell is committed to operating the Geismar Facility in a safe and environmentally protective manner at all times. Should you have any questions regarding this submittal or require additional information please contact Jason Ayres of my staff at (225) 642-3570 or by email at h.jason.ayres@honeywell.com.

Sincerely,

Casey Smithhart
Plant Manager

CS/mjl

RE: Unauthorized Discharge Report, Incident Number: 16-03395 and SPOC # HPH6 15704 and G0V6 15760, LDEQ Agency Interest Number 2082, Honeywell International, Geismar, Louisiana

Enclosure: Attachment 1: Updated LDEQ Written Notification Report Form – LSP Incident Number 16-03395 and SPOC # HPH6 15704 and G0V6 15760

Attachment 2: Incident Investigation Report

Cc:

Ascension Parish Emergency Planning Committee
828 South Irma Blvd., Building 3
Gonzales, LA 70737

Iberville Parish Emergency Planning Committee
c/o Total Petrochemicals and Refining USA, Inc.
P.O. Box 324
Plaquemine, LA 70765

Department of Public Safety and Corrections
Office of State Police
Emergency Services Unit
Transportation and Environmental Safety Section
P.O. Box 66168, A-16
Baton Rouge, LA 70896

RE: Unauthorized Discharge Report, Incident Number: 16-03395 and SPOC # HPH6 15704 and G0V6 15760, LDEQ Agency Interest Number 2082, Honeywell International, Geismar, Louisiana

Attachment 1

Updated LDEQ Written Notification Report Form

LSP Incident Number 16-03395 and SPOC # HPH6
15704 and G0V6 15760

Updated Written Notification Reporting Form
Louisiana State Police Incident Number 16-03395
Single Point of Contact (SPOC) Number HPH6 15704
SPOC Number G0V6 15760
LAC 33:I.3915, 3917, and 3919 and
LAC 33:V.10111

- I. **Company Name:** Honeywell International Inc., Geismar Plant (Honeywell)
 Street or P.O. Box: 5525 HWY 3115 or P.O. Box 226, Geismar, LA 70734
 Telephone Number: (225) 642-3570
 Agency Interest Number: 2082
 Person Writing Follow-up Notification Letter: Mark Louque, Environmental Leader, Fluorine Products
 Written Follow-up Report is required by: LAC 33:I.3925 and/or LAC 33:V.10111.H

II. a. **SPOC # HPH6 15704 (Isolated Stack Overtopping)**

Date and Time of Prompt (verbal) Notification: 8/12/2016 @ 11:20 HRS

State Official contacted when reporting (LSP, LDEQ, LEPC, USCG or Online Reporting):

On-line report

Name of Person making Notification: Lou-Allen Hernandez, HSE Specialist

Identification of the Site or Facility, Vessel, Transport Vehicle or Storage Area from which the Unauthorized Discharge Occurred:

Honeywell International Inc., Geismar Facility – Fluorogypsum Stacking Facility
Solid Waste Permit No. P-0216R2

b. **Incident # 16-03395 (Sulfuric Acid/Oleum)**

Date and Time of Prompt (verbal) Notification: 8/13/2016 @ 10:31 HRS (to Louisiana State Police (LSP) hotline)

State Official contacted when reporting (LSP, LDEQ, LEPC, USCG or Online Reporting):

Deputy Pinion-Ascension Parish local emergency planning committee (LEPC) (Incident # 16-03395) at 10:25 HRS, Officer Jason-LSP (Incident # 16-03395) at 10:31 HRS, Deputy Lauren Iberville Parish LEPC (Incident # 16-03395) at 10:28 HRS, National Response Center (NRC), Officer Gould United States Coast Guard (USCG) (Incident # 1156182 at 10:44 HRS and 1156128 at 17:10 HRS)

Name of Person making Notification: Ray Landry

Identification of the Site or Facility, Vessel, Transport Vehicle or Storage Area from which the Unauthorized Discharge Occurred:

Honeywell International Inc., Geismar Facility – Sulfuric Acid Storage Tank and Oleum Storage Tank

Update on 8/17/2016:

On 8/17/2016, Mark Louque provided an update on this incident to the LSP (at 12:00 HRS) , the Ascension Parish LEPC (at 11:30 HRS) , the Iberville Parish LEPC (at 11:38 HRS), and the NRC (at 12:35 HRS). The Ascension Parish LEPC (Deputy Pinion) provided a new incident number

Written Notification Reporting Form, LSP – Incident Number 16-03395, SPOC Number HPH6 15704, SPOC Number G0V6 15760, Agency Interest Number 2082, Honeywell International, Geismar, Louisiana

(Incident # 16-34413). The NRC (Officer Ennis) also provided a new incident number (Incident 115630).

c. SPOC # G0V6 15760 (Offsite Process Water/Contaminated Stormwater)

Date and Time of Prompt (verbal) Notification: 8/14/2016 @ 20:47 HRS

State Official contacted when reporting (LSP, LDEQ, LEPC, USCG or Online Reporting):

On-line report

Name of Person making Notification: Lou-Allen Hernandez, HSE Specialist

Identification of the Site or Facility, Vessel, Transport Vehicle or Storage Area from which the Unauthorized Discharge Occurred:

Honeywell International Inc., Geismar Facility

III. Date, Time and Duration of the Unauthorized Discharge:

Isolated overtopping of the fluorogypsum stacks (SPOC # HPH6 15704) occurred on 8/11/2016 from approximately 11:30 hours until approximately 12:30 hours that same day and intermittently thereafter.

A sulfuric acid/oleum release (Incident # 16-03395) occurred on 8/13/2016 from approximately 10:00 hours until it was secured at approximately 23:00 hours that same day.

Process water and contaminated storm water (SPOC # G0V6 15760) began escaping the site on 8/14/2016 at approximately 08:00 hours and ended on 8/17/2016 at approximately 12:00 hours. See other responses herein.

IV. Details of the circumstances (unauthorized discharge description and root cause) and events leading to any unauthorized discharge, including incidents of loss of sources of radiation, and if the release point is subject to a permit:

Honeywell's investigation of, and response to, this situation are not yet complete. Thus, much of the information provided in this report is preliminary. Honeywell reserves the right to update and revise the information provided herein in subsequent reports to the Louisiana Department of Environmental Quality (LDEQ) and/or the LSP.

From 8/11/2016 through 8/17/2016, the facility received over 21 inches of rainfall. This was a historic heavy rainfall event (1000 year flood), and the facility's capacity to retain water onsite was exceeded. In addition, there was a sulfuric acid/oleum release that occurred on 8/13/16. The excessive rainfall and, at affected locations, the sulfuric acid/oleum release may have resulted in low pH water overflowing confinement and escaping both within the facility and beyond the facility's boundaries to the north and west. Low pH water began leaving facility boundaries on 8/14/2016 at approximately 08:00 HRS and terminated on 8/17/2016 at approximately 12:00 HRS.

a. SPOC # HPH6 15704 (Isolated Stack Overtopping)

Low pH wastewater overflowed the Fluorogypsum Stacking Facility solid waste surface impoundment into the facility's storm water management system. This isolated overflow event occurred early during the historic rainfall event and intermittently thereafter. See other responses herein.

Written Notification Reporting Form, LSP – Incident Number 16-03395, SPOC Number HPH6 15704, SPOC Number G0V6 15760, Agency Interest Number 2082, Honeywell International, Gelsmar, Louisiana

The current permitted limit for the pollutant(s) released: Not Applicable

The permitted release point/outfall ID: Not Applicable

Which limits were exceeded (SO₂ limit, mass emission limit, opacity limit, etc.) for air releases:

Not applicable.

b. Incident # 16-03395 (Sulfuric Acid/Oleum)

At approximately 10:00 on 8/13/2016, a HF process unit board operator noticed sulfuric acid leaking below the water level inside the containment dike surrounding the Sulfuric Acid and Oleum tanks. The water level within the containment dike was at approximately 20 inches, because of the significant amount of rainfall that the site received over the prior 24 hours. The site continued to receive significant rainfall during and after the release. At the time of discovery the leak rate was significant enough to react with contacted water causing fumes/steam to emanate from within the containment dike. Operations attempted to operate the internal isolation on the discharge line of the Sulfuric Acid tank without success. Operations then attempted to lower the water level within the containment dike in order to expose the leak and provide access to an isolation valve that could be used to stop the leak. The operators were not able to safely lower the water level within the containment dike. Soda ash was applied to the water within the containment dike to help neutralize the acidic water within the containment dike. At approximately 13:14, the acid tank level transmitter failed. At approximately 15:00, the acid water in the containment dike was near the top of the dike, and there was some evidence of seepage through the dike. There were concerns that the acidic water level in the dike would further compromise the Sulfuric Acid tank and the Oleum tank. At approximately 15:23, a cut was made in the south side of the containment dike to lower the level of the acidic water. At 16:00, the area where the dike was cut gave way and released the contents of containment. At 16:30 the dike opening was repaired and additional mitigation water was applied to establish a water level in the dike. Around 17:00, the fuming increased significantly indicating the Oleum tank discharge lines were compromised. Around 17:10, another notification was made to the NRC and updates were provided to the local governmental authorities to inform them that offsite impacts seemed imminent. At approximately 18:30, the Louisiana State Police arrived to help with incident command. Offsite air monitoring along the perimeter of the facility was initiated at approximately 18:40. Additional mitigation water was applied to the acidic water within the containment dike using fire trucks. Around 21:20, with the water level about 2 feet from the top of dike, the temporary dike repair completely washed out, releasing all of the water from containment. Mitigation water was continually applied until the release stopped at 22:50, which indicated both tanks were empty.

The facility had substantial areas of surface water during the course of this event. Although there were some airborne fumes from the release, most of the released material dissolved in the storm water either inside the containment dike or in the flooded areas in the vicinity of the Sulfuric Acid tank and Oleum tank. Impacted storm water flowed through various areas of the Facility and may have flowed offsite. See other responses herein.

Additional information provided 10/18/2016:

See Investigation Report in attachment 2 to this report.

Written Notification Reporting Form, LSP – Incident Number 16-03395, SPOC Number HPH6 15704, SPOC Number G0V6 15760, Agency Interest Number 2082, Honeywell International, Geismar, Louisiana

The current permitted limit for the pollutant(s) released: Not Applicable

The permitted release point/outfall ID: Not Applicable

Which limits were exceeded (SO₂ limit, mass emission limit, opacity limit, etc.) for air releases:

Not applicable. The release exceeded the reportable quantity for sulfuric acid and Oleum as established in the Louisiana Administrative Code (1000 lbs.) and the Code of Federal Regulations (CERCLA 1000 lbs.).

c. SPOC # G0V6 15760 (Offsite Process Water/Contaminated Stormwater)

Additional information provided 10/18/2016:

The HF stacking facility overtopping was caused by rainfall on the footprint of the containment that exceeded the operational capacity of the storm water system and runoff of water from the calcium sulfate milling operation. The pumping capacity of the interceptor ditch pumps were not sufficient to keep the system from overtopping. The storm water commingled with the process wastewater and escaped from containment, resulting in discharges of such waters both inside the facility and to surrounding areas.

The current permitted limit for the pollutant(s) released: Not Applicable

The permitted release point/outfall ID: Not Applicable

Which limits were exceeded (SO₂ limit, mass emission limit, opacity limit, etc.) for air releases:

Not applicable.

V. a. SPOC # HPH6 15704 (Isolated Stack Overtopping)

The common or scientific chemical name of each specific pollutant that was released as the result of an unauthorized discharge:

Additional information provided 10/18/2016:

Low pH process wastewater containing dilute Sulfuric Acid (the CAS # for Sulfuric Acid is 7664-93-3).

CAS number: Not Applicable

U.S. Department of Transportation hazard classification: Not applicable

Best estimate of amounts of any or all released pollutants (total amount of each compound expressed in pounds, including calculations):

5,000 gallons, or 41,725 pounds, of process wastewater (5000 x 8.345 pounds = 41,725 pounds)

b. Incident # 16-03395 (Sulfuric Acid/Oleum)

The common or scientific chemical name of each specific pollutant that was released as the result of an unauthorized discharge: Sulfuric Acid 98% and Oleum (Sulfuric Acid, fuming)

CAS number: Sulfuric Acid 7664-93-9 & Oleum (Sulfuric Acid 7664-93-3 & Sulfur Trioxide 7446-11-9)

Written Notification Reporting Form, LSP – Incident Number 16-03395, SPOC Number HPH6 15704, SPOC Number G0V6 15760, Agency Interest Number 2082, Honeywell International, Gelsmar, Louisiana

U.S. Department of Transportation hazard classification: 8

Best estimate of amounts of any or all released pollutants (total amount of each compound expressed in pounds, including calculations):

Additional information provided 10/18/2016:

Some sulfuric acid/oleum became airborne resulting in a release to the atmosphere. Mitigation water was applied to leaking equipment to suppress the vapors and minimize any offsite impact. As a result, most of the release was captured in surface water at the facility. Honeywell estimates approximately 13,200 pounds of Sulfur Trioxide (SO₃) was released to the atmosphere during the event.

We estimate that the tanks held approximately 3,254,000 pounds of sulfuric acid and 1,814,000 pounds of oleum prior to releasing their contents. The calculations are as follows:

Sulfuric acid: 81.35% of capacity X 2000 tons capacity = 1,627 tons, or 3,254,000 pounds (1,627 X 2000 = 3,254,000)

Oleum: 93.2% of capacity X 1000 tons capacity = 907 tons, or 1,814,000 pounds (907 x 2000 = 1,814,000)

c. SPOC # G0V6 15760 (Offsite Process Water/Contaminated Stormwater)

The common or scientific chemical name of each specific pollutant that was released as the result of an unauthorized discharge:

Additional information provided 10/18/2016:

Low pH process wastewater and contaminated storm water containing dilute Sulfuric Acid (the CAS # for Sulfuric Acid is 7664-93-3).

CAS number: Not applicable

U.S. Department of Transportation hazard classification: Not applicable

Best estimate of amounts of any or all released pollutants (total amount of each compound expressed in pounds, including calculations):

Additional information provided 10/18/2016:

Honeywell estimates that 10-14 million gallons of contaminated low pH water was released.

VI. A statement of the actual or probable fate or disposition of the pollutant or source of radiation and what off-site impact resulted:

With respect to Incident # 16-03395 (Sulfuric Acid/Oleum), the sulfuric acid and oleum were both liquids at the release points which were mostly submerged underwater for the duration of the release. Some sulfuric acid/oleum became airborne resulting in a release to the atmosphere. Mitigation water was applied to leaking equipment to suppress the vapors and minimize any offsite impact. As a result, most of the release was captured in surface water at the facility.

Additional information provided 10/18/2016:

With respect to Incident # 16-03395 (Sulfuric Acid/Oleum) Honeywell estimates approximately 13,200 pounds of Sulfur Trioxide (SO₃) was released to the atmosphere during the event.

See other responses herein.

Written Notification Reporting Form, LSP – Incident Number 16-03395, SPOC Number HPH6 15704, SPOC Number G0V6 15760, Agency Interest Number 2082, Honeywell International, Geismar, Louisiana

VII. Remedial actions taken, or to be taken, to stop unauthorized discharges or to recover pollutants or sources of radiation:

Additional information provided 10/18/2016:

a. SPOC # HPH6 15704 (Isolated Stack Overtopping) and c. SPOC # G0V6 15760 (Offsite Process Water/Contaminated Stormwater)

Initially, earthen dikes were established to stop the process/contaminated storm water from leaving the site. The site retained an environmental response contractor to neutralize the low pH water in ditches and flooded areas adjacent to the plant. Daily updates were provided to the LDEQ regional inspector via email. Neutralization efforts continued until all affected areas were at an acceptable pH level.

b. Incident # 16-03395 (Sulfuric Acid/Oleum)

The actions taken to stop the release are described in section IV above. Following the release of the Sulfuric Acid/Oleum the site began recovery and neutralization efforts in the facility's on-site ditches and conveyance systems. Two environmental response contractors were retained to neutralize the low pH water. Additionally, the site began processing the low pH water through the HF Unit's Wastewater Treatment System. Contaminated soil in the vicinity of the tank dike system was removed by qualified contractors, put in roll-off boxes and disposed offsite.

VIII. Procedures or measures which have or will be adopted to prevent recurrence of the incident or similar incidents, including incidents of loss of sources of radiation:

Additional information provided 10/18/2016:

a. SPOC # HPH6 15704 (Isolated Stack Overtopping) and c. SPOC # G0V6 15760 (Offsite Process Water/Contaminated Stormwater)

Recommendations from investigation.

Recommended Action Items	Due Date	Status
Develop detailed water management plan for HF process area and associated stacking facility.	9/2/2016	Complete
Add Compliance Operating System updates on water management to tiered accountability system	9/30/2016	Complete
Develop a standard process and cleaning trigger point for waste water piping systems and include in water management plan.	9/30/2016	Complete
Evaluate/implement increased water storage capacity in the aggregate storage footprint.	10/31/2016	In-progress
Initiate project to replace interceptor ditch pump to increase pumping capacity to return water to pond system on stacks.	9/2/2016	Complete
Conduct water system capacity and topographical study to determine capacities and make recommendations as needed.	12/30/2016	In-progress

b. Incident # 16-03395 (Sulfuric Acid/Oleum)

Please see corrective actions associated with report in Attachment 2.

IX. If an unpermitted or unlicensed site or facility is involved in the unauthorized discharge, a schedule for submitting a permit or license application to the department, or rationale for not requiring a permit or license:

Not applicable

Written Notification Reporting Form, LSP – Incident Number 16-03395, SPOC Number HPH6 15704, SPOC Number G0V6 15760, Agency Interest Number 2082, Honeywell International, Geismar, Louisiana

X. The reporting party's status (former or present owner, operator, disposer, etc.):

Reporting party is the owner and operator.

XI. For discharges to the ground or groundwater, the following information shall also be included: all information of which the reporting party is aware that indicates pollutants are migrating, including, but not limited to, monitoring well data; possible routes of migrations; and all information of which the reporting party is aware regarding any public or private wells in the area of the migration used for drinking, stock watering, or irrigation:

Additional information provided 10/18/2016:

Honeywell is not aware of any impacts to groundwater from any of the incidents.

XII. What other agencies were notified:

The LSP, NRC, USCG and Ascension and Iberville Parish LEPCs (as stated in section II above).

XIII. The names of all other responsible parties of which the reporting party is aware:

None

XIV. A determination by the discharger of whether or not the discharge was preventable, or if not, an explanation of why the discharge was not preventable:

Additional information provided 10/18/2016:

a. SPOC # HPH6 15704 (Isolated Stack Overtopping) and c. SPOC # G0V6 15760 (Offsite Process Water/Contaminated Stormwater)

No, due to the historic heavy rainfall event, the facility could not retain water onsite beyond its required design capacity.

b. Incident # 16-03395 (Sulfuric Acid/Oleum)

See Investigation Report in Attachment 2. The initial root cause was preventable; however the extent of the release was caused by the historic rainfall event.

XV. The extent of injuries, if any:

Additional information provided 10/18/2016:

Honeywell is not aware of any documented injuries or hospitalizations as a result of the events. There were no fatalities as a result of any event.

XVI. The estimated quantity, identification, and disposition of recovered materials, if any:

Additional information provided 10/18/2016:

a. SPOC # HPH6 15704 (Isolated Stack Overtopping) and c. SPOC # G0V6 15760 (Offsite Process Water/Contaminated Stormwater)

The offsite contaminated water was neutralized in place and not recovered.

Written Notification Reporting Form, LSP – Incident Number 16-03395, SPOC Number HPH6 15704, SPOC Number G0V6 15760, Agency Interest Number 2082, Honeywell International, Geismar, Louisiana

b. Incident # 16-03395 (Sulfuric Acid/Oleum)

With respect to the Sulfuric Acid/Oleum release, most of the released material dissolved in the storm water either inside the containment dike or in the flooded areas in the vicinity of the tanks. Most of the acid/water mixture in the ditch system was neutralized and then processed through the wastewater treatment system. The acid contaminated soil in the vicinity of the tank dike system was removed by qualified contractors and placed into 39 roll-off boxes. The total weight of acid contaminated soil sent for offsite disposal was 1,032,480 pounds.

XVII. Whether the hazardous material released is an extremely hazardous substance and whether it is a solid, liquid, or gas:

Sulfuric acid and sulfur trioxide are extremely hazardous substances. Process wastewater and contaminated storm water are not.

Sulfuric acid and oleum were liquids at the release point, but some sulfuric acid/oleum became airborne resulting in a release of gas to the atmosphere.

Process wastewater and contaminated storm water are liquids.

XVIII. Whether the material released escaped, or could reasonably be expected to escape, beyond the site of the facility:

See other responses herein.

XIX. The medium into which the hazardous material was released (e.g., air, water, land):

See other responses herein.

XX. Whether the release resulted in a fire or explosion:

The releases did not result in any fire or explosion.

XXI. Details regarding wind direction, wind speed, temperature, and precipitation:

During Incident # 16-03395 (Sulfuric Acid/Oleum), the wind was from the south at 6-8 miles per hour; the temperature was approximately 77° F; and rain fell intermittently.

XXII. Any need or a recommendation for, an offsite protective action (road closure, shelter-in-place, evacuation, or none):

Additional information provided 10/18/2016:

Yes. During Incident # 16-03395 (Sulfuric Acid/Oleum), a shelter in place was issued to include all residents from the Iberville/Ascension Parish line to Louisiana Highway 74 to Highway 30 to Point Claire Road. Initial advisory was issued at 18:01 hours. A second advisory was issued at 18:52 hours. The shelter in place was lifted at 23:14 hours. Portions of Louisiana Highways 30, 74, 75 and all of Louisiana Highway 3115 were closed from approximately 15:30 HRs to approximately 23:00 HRs on 8/13/16. There were no other protective actions for this incident.

There were no protective actions for SPOC # HPH6 15704 (Isolated Stack Overtopping) or SPOC # G0V6 15760 (Offsite Process Water/Contaminated Stormwater).

RE: Unauthorized Discharge Report, Incident Number: 16-03395 and SPOC # HPH6 15704 and G0V6 15760, LDEQ Agency Interest Number 2082, Honeywell International, Geismar, Louisiana

Attachment 2

Incident Investigation Report

Incident Number 16-03395

Incident No.: 498870

Incident Title: Honeywell - Geismar Sulfuric Acid and Oleum Spill

Incident Date/Time: Saturday - August 13th, 2016 – 10:00 AM to 10:50 PM

Incident Location: Honeywell Performance Materials and Technologies, Geismar, LA - Hydrogen Fluoride (HF) Plant, 99% Sulfuric Acid and Oleum Storage area

Incident Description: On August 13th, 2016, at the Honeywell Performance Materials and Technologies facility in Geismar, Louisiana, loss of primary containment at the sulfuric and oleum storages in the HF Production Unit resulted in a spill of 1,627 tons of 99 wt% sulfuric acid and 907 tons of 20 wt% oleum.

Date Incident Investigation Began: Sunday - August 14th, 2016

Incident Investigation Team:

H. Jason Ayres	HSE Manager
Stuart Boone	Apollo Investigation Team Leader-HOS Manager
Frederico Gabriel	HF/Aclon Operations Manager
Josh dos Ramos	HF/Aclon Maintenance Superintendent
James Hudson	Maintenance Manager
John McCarthy	Principal Process Engineer- Knowledgeable of the process
Clyde Anderson	HF Production Shift Supervisor- Knowledgeable of the process
Chuck Sanchez	HF Operations Coordinator- Knowledgeable of the process
Jim Phillips	PMT HSE PSM Business Implementation Leader
Benny Bennett	Reliability Engineering Leader
Mark Middleton	Sr. Reliability Engineering Manager
Haluk Kopkalli	Sr. Principal Chemical Process Engineer
Evan Prout	Engineering Technology Leader

Injuries/Effects:

Safety: No report of onsite injuries

Environmental: Release of reportable quantities to air and ground, evidence of offsite impact

Investigation Summary (including contributing factors):

Prior to the event, a systemic change from TASK-LINE® PTFE (polytetrafluoroethylene) gaskets to TEXOLON® PTFE gaskets was implemented by Honeywell Performance Materials & Technologies gasket supplier (as early as 2009) due to reported quality issues. This change was considered to be a “replacement in kind.”

TASK-LINE® PTFE and TEXELON® PTFE gaskets are similar in color (white), feel, and material of construction. Critical physical property differences such as compressive and tensile strengths, which have an effect on sealing characteristics under compressive load, would not have been readily apparent to mechanics.

Four months prior to the event, maintenance was performed on the sulfuric acid tank effluent piping system. A portion of this maintenance activity involved replacement of piping, which involves replacing and seating of gaskets between flanges, as the tank connection and piping system is flanged. Flange bolts are tightened to gasket manufacturers’ torqueing specifications and is dependent on the size of the flange, bolt pattern, and physical properties of the gasket material. It is possible that the difference in

torqueing requirements between the TASK-LINE®PTFE gaskets and the TEXOLON®PTFE gaskets contributed to the development of a small leak from a flange-gasket clearance on the recently replaced piping system.

Three days of heavy rain, as much as 16 inches, was recorded on the site's weather monitoring system leading up to the event. With the sustained heavy rainfall, it was determined that water would have exceeded the containment area sump pump design capacity, resulting in standing water in the dike circumscribing the sulfuric acid and oleum storages. Heat of mixing and a localized drop in pH at the leak point would have produced a corrosive mixture. The corrosive mixture would have increased the flange-gasket orifice area thereby increasing the rate of release and accelerating the corrosion rate.

An attempt to access the manual shut-off valve on the outlet nozzle of the sulfuric acid tank was made, but high temperature and the presence of standing low pH water made access to the valve difficult.

To reduce the risk that the continuing presence of the water and sulfuric acid mixture would compromise the integrity of the sulfuric acid tank, oleum tank, and associated piping, an attempt to drain the corrosive mixture from the containment area was made by breaching the dike wall.

The leak at the flange-gasket opening continued until the flange-flange joint failed. Failure of the flange-flange joint resulted in a release rate consistent with a full pipe opening.

It is believed that total loss of the sulfuric acid storage in combination with the accumulated rainfall and subsequent rise in temperature added to the corrosivity within the containment area. Ensuing corrosion caused a loss of the effluent oleum piping system integrity and a release of the oleum storage tank into the containment area consistent with a full pipe opening.

Recommended Actions:

Recommended Action Items	Assigned To	Target Date	Status	Evidence of Completion
1. Implement a more robust design of piping system and instrumentation inside dike area.	Jim Hudson	9/1/2016	Complete	Installed expansion loops to replace elastomeric expansion joints. Upgraded to welded connections from the tank bottoms to first automatic block valves. See attachment slide 1 and 2.
2. Paint with acid detecting paint on flanges/valves with routine checks for leaks.	Jim Hudson	9/15/2016	Complete	Flanges on the Sulfuric and Oleum piping are painted with acid detecting paint. See attachment slide 1.
3. Consider tank system redesign.	Morristown Engineering	10/28/2016	In Progress	
4. Send High Sump Level Alarm to Distributive Control	Byron Jordan / Blaine Gibson	8/31/2016	Complete	DCS High Sump Level Urgent

System (DCS) with High or Urgent Priority				Priority Alarm in place. See attachment slide 3 and 5.
5. Install pH meter transmitter on Oleum/Sulfuric sump with DCS reading/alarm	Byron Jordan / Blaine Gibson	8/31/2016	Complete	pH meter transmitter installed with DCS reading and alarms. See attachment slide 4 and 5.
6. Review procedure, installation and material of construction on bolts and gaskets around Oleum and Sulfuric Tanks	Willie Henderson	9/1/2016	Complete	Created pipe specs PAS & PDS via CPS-MOC-267 to specify flange gaskets, bolting, Belleville washers and protective coatings for piping inside of U-202/U-203 dike. Provided pipe flange bolt torques for same. Also completed RFC #16AHF3689 to cover piping modifications and addition of new emergency shut-off XVs. See attachment slide 6 and 7.
7. Perform sump pump capacity calculation \ Increase capacity of existing pump	Haluk Kopkalli	8/26/2016	Complete	57.7 gpm calculated; 80 gpm recommended; Installed pump capacity of 130 gpm. See attachment slide 8.
8. Meet 100yr rainwater requirements with emergency pump	Sam Oliver	8/26/2016	Complete	It was determined that an emergency pump was not needed based on calculations of the need of a 80 GPM pump to meet the 100 yr. 24-hour rain event requirement. The

				10" drain line was installed as well as a back-up to a pump failure. See attachment slides 8 and 9.
9. Install Stainless Steel schedule 40, 10" line and valve to drain dike in an emergency	Jim Hudson	8/31/2016	Complete	Installed 10" diameter emergency drain pipe for secondary drain capability. See attachment Slide 9.
10. Add Remote Operated Valves (ROV's) to shut off oleum &/or acid flow. Note: All flanges must be visible to the operator for this safeguard to be effective.	Fred Gabriel	9/30/2016	Complete	Remote Operated Valves installed on Oleum and Sulfuric systems. See attachment Slide 10.
11. Add independent level indication in dike sump that starts pump on high level	Fred Gabriel	9/30/2016	Complete	DCS High Sump Level Urgent Priority Alarm in place. In addition, a green run indication light has been installed at the control station. See attachment slide 3 and 5.
12. Add pH indication and alarm in dike with operator response; to close ROV's	Fred Gabriel	9/4/2016	Complete	pH meter transmitter installed with DCS reading and alarms. In addition, a blue low pH indication light has been installed at the control station. See attachment slide 4 and 5.
13. Modify secondary containment inspection form to add new changes: • Grillage • pH • pump status • level indication • triggered acid indicating paint • 10" drain line unobstructed	Sam Oliver	9/30/2016	Complete	Daily inspection form newly modified and put into place. See attachment slide 11.

14. Conduct training on newly modified secondary containment inspection form	Sam Oliver	10/21/2016	Complete	Operations personnel have been trained on the modified inspection form.
15. Develop Hydrogen Fluoride unit rain water management Standard Operating Procedure to document actions for normal or abnormal rain fall conditions.	Justin Delapasse	12/2/2016	In Progress	
16. Review and conduct training on Quality Control for bolting and torqueing. Follow up audit process defined for class 1 or 2 piping systems that could become submersed.	Jim Hudson	10/28/2016	In Progress	

Supporting Evidence- Action 1 and 2



Welded connections

Acid Detecting Paint

Supporting Evidence – Action 1

2

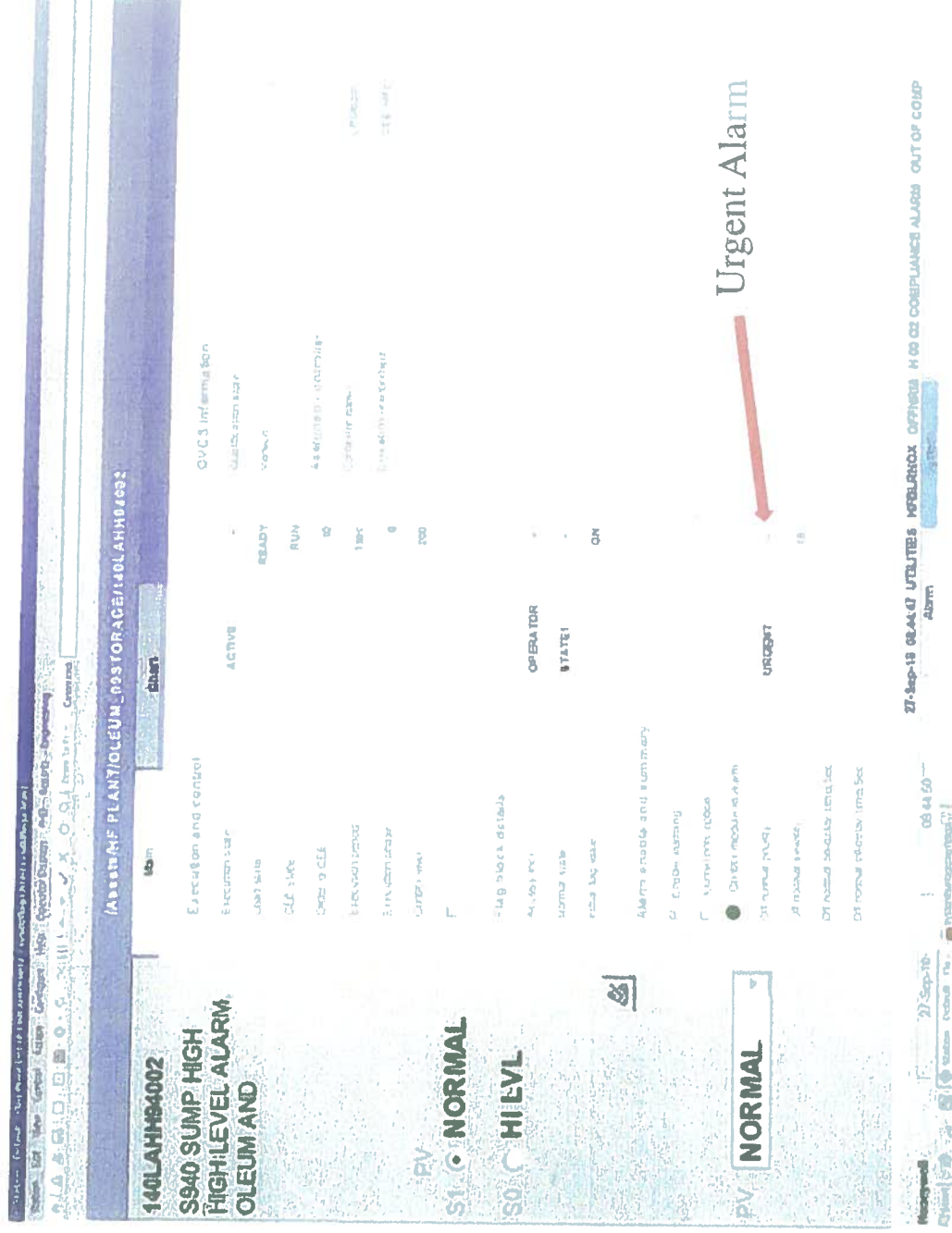
Oleum System
Expansion Loop



Sulfuric Acid System
Expansion Loop



Supporting Evidence –Action 4 and 11



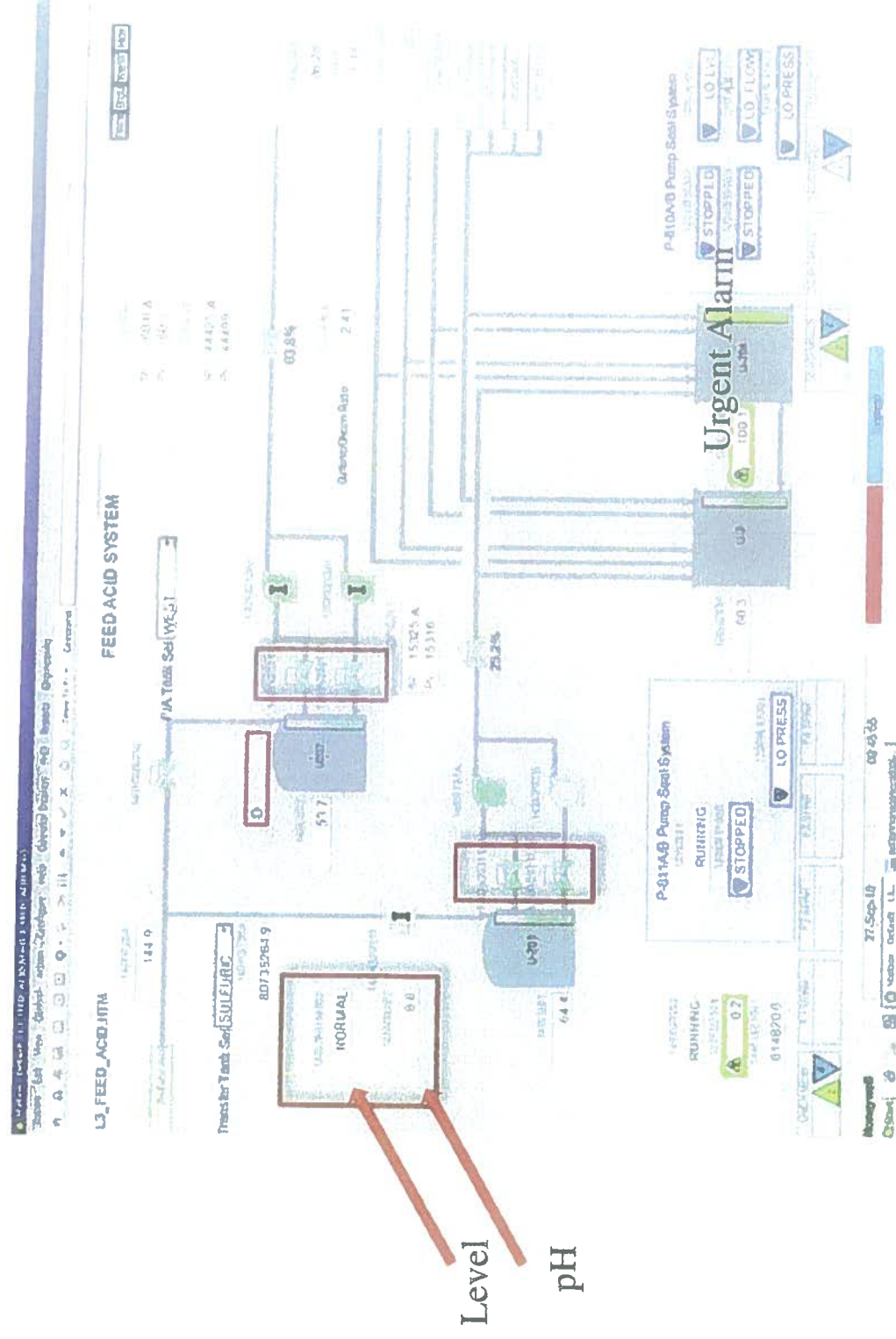
Screen shot of the HF Process Distributive Control System indicating sump high level alarms and priorities.

4



Supporting Evidence –Action 4, 5, 6 and 11

5



Screen shot of the HF Process Distributive Control System indicating sump level and pH.

Supporting Evidence – Action 6



CPS-411-267-R

CHEMICALS PIPING SPECIFICATION MOC FORM	
Route To: ☒ Level III Coordinator ☐ Plant Rep AMPW ☐ Plant Rep NH ☐ Plant Rep O&W ☐ Plant Rep CMW ☐ Plant Rep MIV	Suggested Action by Team: ☒ See new Addition to Chemical Specs ☐ See new Deletion from Chemical Specs ☐ See new Modification to Chemical Specs ☐ See new Combination of Chemical Specs ☐ See elimination entry No further action needed
Final Disposition: ☐ Approved Change in Chemical Specs ☐ Approved Change in Plant Level Specifications ☐ Approved for Change Deleted	
Date: 8/29/16 Valve Tag Number: 267760121 ACI/CR: PAS & PDS WFT: 267760121	
Initiator & Phone Number: W. T. Henderson 229/642.2750	
MDX Short Title: Add PAS (Oleum Submerged) and PDS (H ₂ SO ₄ Submerged) Specifications to HF Plant	
Description of Change (Provide technical justifications for change): As a result of the acid leaks into the carbon dills from the Oleum and H ₂ SO ₄ Storage tank piping on 8/19/16, pipe specifications PAS (Oleum Submerged), and PDS (H ₂ SO ₄ Submerged) are being created. These new specifications will capture the piping, flange bolting, gaskets, bellows, welds and protective coating necessary to prevent flange leaks and the subsequent formation of aggressive and highly corrosive chloro acid concentrations in the event these components are again subjected to steam water contained by the carbon dills. The new PAS and PDS pipe specifications are being posted/checked off of the existing PA (Oleum) and PD (H ₂ SO ₄) specifications. New standard PAS and PAD pipe spec exist on Pages #1 & 41.	
PROCESS SAFETY CHECKLIST: Review and consider the impact on the following. Check: Y, N, or Unsure for each item.	
1 ☒ Y ☒ N ☒ U Changes piping to increase rating? 2 ☒ Y ☒ N ☒ U Changes pipe type or design temperature? 3 ☒ Y ☒ N ☒ U Potential for process contamination? 4 ☒ Y ☒ N ☒ U Potential to increase corrosion rates? 5 ☒ Y ☒ N ☒ U Potential to affect inspection procedures? 6 ☒ Y ☒ N ☒ U Changes piping material of construction? 7 ☒ Y ☒ N ☒ U Changes pipe flange specifications? 8 ☒ Y ☒ N ☒ U Changes bolting material of construction? 9 ☒ Y ☒ N ☒ U Changes construction materials of construction? 10 ☒ Y ☒ N ☒ U Changes thermal well materials of construction?	11 ☒ Y ☒ N ☒ U Changes valve specifications? 12 ☒ Y ☒ N ☒ U Changes gasket materials or type? 13 ☒ Y ☒ N ☒ U Changes B-11.1 Piped Check valves 14 ☒ Y ☒ N ☒ U Changes NDE requirements? 15 ☒ Y ☒ N ☒ U Can change be installed into existing specifications? 16 ☒ Y ☒ N ☒ U Does change require consultation to existing plant? 17 ☒ Y ☒ N ☒ U Changes SAP System Specifications? 18 ☒ Y ☒ N ☒ U Changes SAP Valve Catalog Descriptions? 19 ☒ Y ☒ N ☒ U Changes HMI/E permits or procedures? 20 ☒ Y ☒ N ☒ U Create a new or delete/improve an existing pipe, valve, gasket, bolting or construction?
Briefly list and discuss all "Yes" or "Unsure" answers and any other safety concerns below: 16) Trailing gaskets (by function only) and bellows welds are being added to new Oleum and H ₂ SO ₄ piping on the carbon dills and subsequent to the tank on 8/19/16. 20) The new PAS and PDS pipe specifications are being posted/checked off of the existing PA (Oleum) and PD (H ₂ SO ₄) specifications.	

CHEMICALS PIPING SPECIFICATION MOC FORM	
Level II Coordinator's Disposition Comments: None. For approved change, include any pertinent details and if change is to be implemented through maintenance or operations, if change is not approved, include reason.	(PS-411-267-R) Page 2
Plant Representative's Disposition Comments: None. For approved change, include any pertinent details and if change is to be implemented through maintenance or operations, if change is not approved, include reason.	
Plant Representative supports this Change	

Management of Change Documentation

Supporting Evidence – Action 6

HF PIPING AND VALVE SPECIFICATIONS

See cover page for general piping requirements.

Symbol	Service	Max Press	Max Temp
PAS	OLEUM, OLEUM (20%) SUBMERGED	200	300
Pipe Size	Service	Gaskets	Paint Spec
2.00 - 10.00	Category	PTFE ENCAPSULATED 304 STAINLESS STEEL, INSERT, CLASS 150 SELF-CENTERING FLAT RING, 1/8" THICK, TASKLINE BY PUREFLEX, NO SUBSTITUTES	Branch USE FITTINGS ONLY
Spec No	N	Weld	
Posters	Test %		
B7MC	20		
Special			
Cond			
Limited			
By			
SEAMLESS CARBON STEEL, BUTTWELD, CARBON	Fittings	Flanges	
STANDARD WEIGHT, (SCH 40), STEEL - SCHEDULE 150, RAISED FACE			
ASTM A106 GRADE B OR ASTM A53 GRADE B, ASME B36.10M	EQUAL TO PIPE, A234	FORGED STEEL, BORE TO MATCH PIPE	
USF STANDARD WALL ABOVE ASME B16.9	ASTM A105, ASME B16.5		
107			
Valve Tag	Valve Size	Description	
		PLUG, NON-LUBRICATED, CLASS 150 FLANGED RAISED FACE, ALLOY 20 BODY AND PLUG, MARATHON STYLE	
P61NBHM	4.00 - 18.00	TEFLON SLEEVE, HEAVY DUTY CAST IRON GEAR OPERATED, PLUG TO BE 1/8" DRILLED ON BOTTOM, HASTELLOY C BOLTS, (LOCKING DEVICE REQUIRED) SEE NOTES LISTED UNDER THE SPECIFIC VALVE TAG IN THE PURCHASE DESCRIPTION FOR THIS VALVE.	
		PLUG, NON-LUBRICATED, CLASS 150 FLANGED RAISED FACE, MARATHON VERSION, ALLOY 20 BODY AND PLUG, TEFLON SLEEVE, LEVER HANDLE, PLUG TO BE DRILLED ON BOTTOM, HASTELLOY C BOLTS, (LOCKING DEVICE REQUIRED) SEE NOTES LISTED UNDER THE SPECIFIC VALVE TAG IN THE VALVE LIST TAB WHICH MUST BE ADDED TO THE PURCHASE DESCRIPTION FOR THIS VALVE.	
P61NAHM	0.50 - 3.00		
Pipe Spec. Requirements for HF			
General Material Notes			
- TEFLON COATED H13, 60KSI BOLT STRESS KEY BELLEVILLE WASHERS, NO SUBSTITUTES, USED UNDER EACH NUT. - POWER BUFF W/80 GRIT AND APPLY TWO COATS OF AWC ACID DETECTING PAINT TO PIPE FLANGES ONLY. APPLY TWO COATS OF 5-W EURO-HAVT TO PIPE AND FITTINGS. - AWC ACID DETECTING PAINT APPLIED TO ALL VALVE BODIES BY SUPPLIER.			

Pipe Specification Documentation

HF PIPING AND VALVE SPECIFICATIONS

See cover page for general piping requirements.

Symbol	Service	Max Press	Max Temp
PDS	SULFURIC TRANSFER LINE SUBMERGED	150	120
Pipe Size	Service	Gaskets	Paint Spec
2.00 - 10.00	Category	PTFE ENCAPSULATED 304 STAINLESS STEEL, INSERT, CLASS 150 SELF-CENTERING FLAT RING, 1/8" THICK, TASKLINE BY PUREFLEX, NO SUBSTITUTES	Branch USE FITTINGS ONLY
Spec No	N	Weld	
Posters	Test %		
B7MC	20		
Special			
Cond			
Limited			
By			
SCHEDULE 40S	Pipe	Fittings	Flanges
SEAMLESS STAINLESS BUTTWELD, SEAMLESS			WELD NECK, CLASS 150,
STEEL - ASTM A312	ASTM A403 GRADE WP.S	BORE TO SUIT PIPE, RAISED	
GRADE TP304/304L	304/304L, SCHEDULE EQUAL ASTM A182 GRADE	FACE, STAINLESS STEEL	
ASME B36.19M	TO PIPE, ANSI B16.9		
Valve Tag	Valve Size	Description	
		PLUG, NON-LUBRICATED, CLASS 150 FLANGED RAISED FACE, MARATHON VERSION, ALLOY 20 BODY AND PLUG, TEFLON SLEEVE, LEVER HANDLE, PLUG TO BE DRILLED ON BOTTOM, HASTELLOY C BOLTS, (LOCKING DEVICE REQUIRED) SEE NOTES LISTED UNDER THE SPECIFIC VALVE TAG IN THE VALVE LIST TAB WHICH MUST BE ADDED TO THE PURCHASE DESCRIPTION FOR THIS VALVE.	
P61NAHM	0.50 - 3.00		
		PLUG, CLASS 150 DUCTILE IRON, STANDARD PORT, PFA LINED BODY, BALL, VIRGIN PTFE SEATS AND SEALS, ANSI FACE-TO-FACE, OVAL HANDLE THROUGH - GEAR OPERATOR OR T-HANDLE FOR 3" AND 4" GEAR OPERATOR 6" AND ABOVE, HASTELLOY 276 BOLTING, LOCKING DEVICE REQUIRED.	
B81ND	11.00 - 12.00		
Pipe Spec. Requirements for HF			
General Material Notes			
- TEFLON COATED H13, 60KSI BOLT STRESS KEY BELLEVILLE WASHERS, NO SUBSTITUTES, USED UNDER EACH NUT. - POWER BUFF W/80 GRIT AND APPLY TWO COATS OF AWC ACID DETECTING PAINT TO PIPE FLANGES ONLY. - AWC ACID DETECTING PAINT APPLIED TO ALL VALVE BODIES BY SUPPLIER.			

Supporting Evidence – Action 7 & 8



New Sump Pump on the EJ75D-3 Curve. 130 gpm at 58 ft of head with a 3” discharge pipe; which meets the anticipated 100 year 24 hour rain event.

Supporting Evidence – Action 9

9



Stainless Schedule 40 10”
Drain Valve installed

Supporting Evidence - Action 10

10

Sulfuric Acid System



Oleum System



ROV's
installed

Supporting Evidence – Action 13

Honeywell

RF Observe Station Term Unit Daily Inspection

Control Panel: Shut Panel in Automatic High level lights are on 1/2 in air lift's are on and all lights are indicating proper location. No change in pressure noted.

Valves / Flanges: No evidence of leaks. All flanges, valves and other equipment were in good condition. No change in pressure noted.

Sump Grillage: Sump grillage over and no change in pressure.

Drain Pipe: Drain pipe over and no change in pressure.

Over Flow: Over flow pipe over and no change in pressure.

Drain Valve: Drain valve closed and no change in pressure.

RF Observe Station Term Unit Daily Inspection

RF Observe Station Term Unit Daily Inspection

RF Observe Station Term Unit Daily Inspection

RF

RF

RF

Inspection form modified.