



EXAMPLE DOCUMENT ONLY

CBTA
Drain System
SP/TRN/TM89

Candidate's Name:

Candidates Signature: _____

Assessor's Name: _____

Assessor's Signature: _____

Date Completed: CBTA Reassessment: _____

For first time candidates, the entire CBTA is to be completed. For the purposes of re-assessment only the demonstrative section requires completion.

Written

Question	Answer	Assessor check
<p>What are the fundamental differences between USD, CSD and the CHD systems</p>	<p>1.1 Uncontrolled Stormwater Drain (USD) – Category 1 Drain</p> <p>The USD collects stormwater run-off from non-process areas and some bunded CSD areas. Flow from these drains is directed mostly to the Northwest dam or Firewater dam, however some runoff will pass directly off-site. Water discharged from the Northwest dam is monitored as per HSE/ENV/PC03.</p> <p>1.2 Controlled Stormwater Drain (CSD) – Category 2 Drain</p> <p>The CSD collects stormwater run-off from non-bunded process areas which may contain trace levels of hydrocarbon and chemicals. The initial runoff flow is directed to a separator and then to the wetlands system for treatment prior to discharge from site. Once the wetlands dam U-925 is full the water passes directly offsite and is assumed to contain less contaminants. Water discharged from the wetlands system and the bypass channel is monitored as per HSE/ENV/PC03.</p> <p>Water from the following areas is included in this system:</p> <ul style="list-style-type: none"> • Water collected in process bunded areas (low bunds) • Tank bunded areas may be released to this drain if the water quality is suitable for wetlands treatment • Process tundishes and pump drip trays <p>1.3 Closed Hazardous Drain (CHD) – Category 3 Drain</p> <p>The CHD is a pressurised drain for draining hazardous liquids from normally pressurised and hazardous process equipment. Liquids in the CHD are directed to Flare Knockout Drum, V-652 via Closed Drain header.</p>	

	<p>There is no separate Open Hazardous Drain system.</p>	
<p>Explain the operation of the tanker loading area spill pit</p>	<p>1.3.1 Normally Open to CSD / Tanker loading area spill pit</p> <p>A spill pit is provided for the tanker loading area. Normally, the stormwater collected in the tanker-loading pad will flow through the system sump that has a water seal leg sized to prevent up to 9000 litres of Condensate from entering the CSD system. During loading the drain pipe connected to the CSD is closed. In the event of a condensate spill, condensate is retained in the pit and will need to be pumped back to the Condensate Tank (T-613).</p> <p>In the event of a MEG spill, (water miscible) MEG is retained in the pit and will need to be pumped back through the Rich MEG Degasser to the Rich MEG Tank.</p> <p>Should MEG enter the CSD system, the impact on the wetlands system can be minimised by isolating the interceptor and primary holding pond from the wetlands after the spill has been captured.</p>	
<p>Explain the various category drainage systems used in the plant</p>	<p>(as above)</p>	
<p>Provide a detailed explanation of the plant Category 1 – 2 & 3 drainage systems.</p>	<p>2 PLANT DRAINAGE SYSTEMS</p> <p>2.1 Uncontrolled Stormwater Drain (USD) – Category 1 Drain</p> <p>The USD collects stormwater run-off from non-process areas and some bunded CSD areas. Flow from these drains is directed mostly to the Northwest dam or Firewater dam, however some runoff will pass directly off-site. Water discharged from the Northwest dam is monitored as per HSE/ENV/PC03.</p> <p>2.2 Controlled Stormwater Drain (CSD) – Category 2 Drain</p> <p>The CSD collects stormwater run-off from non-bunded process areas which may contain trace levels of hydrocarbon and chemicals. The initial runoff flow is directed to a separator and then to the wetlands system for treatment prior to discharge from site.. Once the wetlands dam U-925 is full the water passes directly offsite and is assumed to contain less</p>	

contaminants. . Water discharged from the wetlands system and the bypass channel is monitored as per HSE/ENV/PC03.

Water from the following areas is included in this system:

- Water collected in process bunded areas (low bunds)
- Tank bunded areas may be released to this drain if the water quality is suitable for wetlands treatment
- Process tundishes and pump drip trays.

2.3 Closed Hazardous Drain (CHD) – Category 3 Drain

The CHD is a pressurised drain for draining hazardous liquids from normally pressurised and hazardous process equipment. Liquids in the CHD are directed to Flare Knockout Drum, V-652 via Closed Drain header.

There is no separate Open Hazardous Drain system.

2.4 MEG Regeneration Drain (MRD) – Category 2 and Category 3 Drain

The MRD is a separate hazardous drain is provided for the MEG Regeneration skid to control and contain MEG losses. MRD liquids are eventually recovered to Rich MEG degasser vessel or removed from site.

2.5 Glycol Drain (GD) – Category 2 and Category 3 Drain

The GD is a separate hazardous drain provided for the TEG regeneration units to avoid the possibility of glycol being injected to ground waters with the produced water.

Glycol Drains are provided for both TEG Regenerations skids, Train 1 and Train 2.

Each skid is fitted with a drip pan and a Stand alone Sump. Any spillages are contained within the drip pan and then drained into the collection sump.

These liquids are eventually recovered to the TEG surge drum or removed from site

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	<p>2.6 Stand-alone Sumps (SAS) – Category 3 Drain</p> <p>Stand-alone sumps have been provided in process areas where certain chemicals or lubricating oils are used and stored. These sumps have no connection to any drains system and need to be inspected regularly and manually pumped out as necessary.</p> <p>2.7 Sewage Systems (SS) – Category 3 Drain</p> <p>The wastewater from the site amenities located in the old control room are treated by means of a septic tank and overflow directed to an absorption/transpiration disposal trench.</p> <p>The wastewater from the site amenities located in the main office building and control room are directed to a below ground storage tank which is periodically emptied with a vacuum truck and the contents taken offsite for treatment at a nearby sewerage treatment plant.</p>	
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Oral

Question	Answer	Assessor check
What is the purpose of the western Compressor drain sump T 403	To capture waste oil and seal gas from compressors C-401-405	✓
What is the maximum capacity of waste oil sump T-403	1500 litres	MB
What is the purpose of bulk storage tank T-404	T-403 is pumped into T-404. T-404 is the load point for waste oil removal.	✓
How is the level monitored in T-404	Monitored via LG – 7648 on the side of the vessel	✓
What is the maximum oil storage capacity of Tank T-404	3240 Litres	✓
How is the waste oil removed from T-404	Via the truck load out point at the vessel	✓

Demonstrative

Question		Assessor check
Locate and explain the Philosophy of the MEG regen drain system and pit sump tank T-362.	UGS-PB--332	
Using the P&ID’s for the plant Controlled Stormwater Drains provide an explanation on how the system functions. Use UGS-PB-911, UGS-PB-732, Drawing # 8407853-UGS-CC-0011, 8407853-UGS-CC-0012 & 8407853-UGS-CC-0019.	<p>The CSD is a system consisting of surface spoon drains ending in water sealed sumps located at various locations in the process plant. These are connected by underground drainpipes to the interceptor/separator water treatment system which discharges to the artificial wetlands, and then offsite. Only the ‘first flush’ of CSD runoff water passes through this system. . Once the wetlands dam U-925 is full the water passes directly offsite and is assumed to contain less contaminants.</p> <p>The water sealed sumps located throughout the plant prevent migration of hydrocarbon vapours or spilled liquids through the CSD system to the treatment system.</p> <p>The primary inputs to the Controlled Stormwater Drain (CSD) system are stormwater and firewater run-off from bunded and non-bunded process areas. Other secondary, non-routine inputs include process tundishes and drip trays that are piped into the CSD sealed sumps.</p> <p>Liquids collected in the CSD are directed to the wetlands treatment system GP/PS/PC03. Pg 6</p>	
At Tanker loading pad using P&ID UGS-PB-604 explain how the Tanker loading area spill pit drain system works and what are the requirements during condensate loading.	A spill pit is provided for the tanker loading area. Normally, the stormwater collected in the tanker-loading pad will flow through the system sump that has a water seal leg sized to prevent up to 9000 litres of Condensate from entering the CSD system. During loading the drain pipe connected to the CSD is closed. In the event of a condensate spill, condensate is retained in the pit and will need to be pumped back to the Condensate Tank (T-613).	

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	<p>In the event of a MEG spill, (water miscible) MEG is retained in the pit and will need to be pumped back through the Rich MEG Degasser to the Rich MEG Tank.</p> <p>Should MEG enter the CSD system, the impact on the wetlands system can be minimised by isolating the interceptor and primary holding pond from the wetlands after the spill has been captured.</p> <p>GP/PS/PC03. Pg 7</p>	
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The candidate is assessed as being:

Competent

Not yet competent

Areas requiring improvement:

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For first time candidates only:

Department Manager's name: _____

Department Manager's signature: _____

Date: 27/5/18

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