



No. 01504

A. GENERAL INFORMATION:

1. Spill incident Number: 2011-615707
2. Name of Location EGWA I W/27
3. Name of nearest community EGWA I (OKPOGBENE)
4. State DELTA STATE LGA WARRI SOUTH WEST
5. Type of Production facility/Installation WELL HEAD Asset owner /District SWAMP I WEST(NTS1)

B. INCIDENT INFORMATION:

6. Details of incident

- a. Date of incident 28TH JANUARY 2011
- b. Date/Period of investigation, 1ST FEBRUARY 2011
- c. Description of spill point environment

- | | | |
|--|------|------|
| <input type="checkbox"/> Firmed soil | [Y] | [N]✓ |
| <input type="checkbox"/> Loose soil | [Y] | [N]✓ |
| <input type="checkbox"/> Previously excavated area | [Y] | [N]✓ |
| <input type="checkbox"/> Under water | [Y] | [N]✓ |
| <input type="checkbox"/> Swampy | [Y]✓ | [N] |
| <input type="checkbox"/> Exposed pipe surface | [Y] | [N]✓ |

d. Description of leak point (tick as applicable);

- | | | |
|--|------|------|
| <input type="checkbox"/> Drilled hole, | [Y] | [N]✓ |
| <input type="checkbox"/> Hack saw cut, | [Y] | [N]✓ |
| <input type="checkbox"/> Explosive tear, | [Y] | [N]✓ |
| <input type="checkbox"/> Complete Rupture | [Y] | [N]✓ |
| <input type="checkbox"/> Inward dent, | [Y] | [N]✓ |
| <input type="checkbox"/> Well head tampering | [Y]✓ | [N] |
| <input type="checkbox"/> Failed Weld-on illegal hot tap valve, | [Y] | [N]✓ |
| <input type="checkbox"/> Missing pipeline (flowline) | [Y]✓ | [N] |
| <input type="checkbox"/> Crude oil theft (illegal bunkering) point, | [Y]✓ | [N] |
| <input type="checkbox"/> Third party tampering with Clamp Bolt/Nut, | [Y]✓ | [N] |
| <input type="checkbox"/> Third party tampering with valve setting, | [Y]✓ | [N] |
| <input type="checkbox"/> Third party tampering with flange Nuts/bolts, | [Y]✓ | [N] |
| <input type="checkbox"/> Corrosion, | [Y] | [N]✓ |

Type: _____

- | | | |
|--|-----|------|
| <input type="checkbox"/> Saver-pit over flow, | [Y] | [N]✓ |
| <input type="checkbox"/> Surge vessel overflow, | [Y] | [N]✓ |
| <input type="checkbox"/> Outward dent | [Y] | [N]✓ |
| <input type="checkbox"/> Others (specify). _____ | | |

e. Spill point coordinates

Northing:

175694

Easting:

334583



C. RISK/DAMAGE ASSESSMENT

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7. Type of environment of spill site:

- ☐ Land
☒ Swamp
☐ water

Type of environment of which oil has spread:

- ☐ Land
☒ Swamp
☐ water

8. Distance from the nearest sensitive habitat

- ☐ Government reserved and designated protected area
☐ Drinking water source
☐ Built up area
☐ Farmlands
☐ Fish Farm/Pond
☐ Fishing net
☐ Others (specify).

[,m]
[,m]
[,m]
[,m]
[,m]
[,m]

} NOT APPLICABLE

9. Containment measures put in place;

- ☐ Booms
☐ Trench
☐ Dyke

[Y✓] [N]
[Y] [N]
[Y] [N]

☐ Others: _____

10. Any pictures or video coverage?

[Y✓] [N]

11. Was there any disruption to the investigation?

[Y] [N✓]

If yes give brief description:

NOT APPLICABLE

D. TYPE/NUMBERS OF PROPERTIES, IF ANY, FOUND WITHIN THE AREA OF SPREAD OF OIL

A. Structures / Properties

S/N	Type of Structures	Description	Size	Number	Comments
	NONE WITHIN AREA OF IMPACT				



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B. Crops/Economic Trees

S/N	Types of crops	Young	Medium	Matured	Quantity	Comments
	NONE WITHIN AREA OF IMPACT					

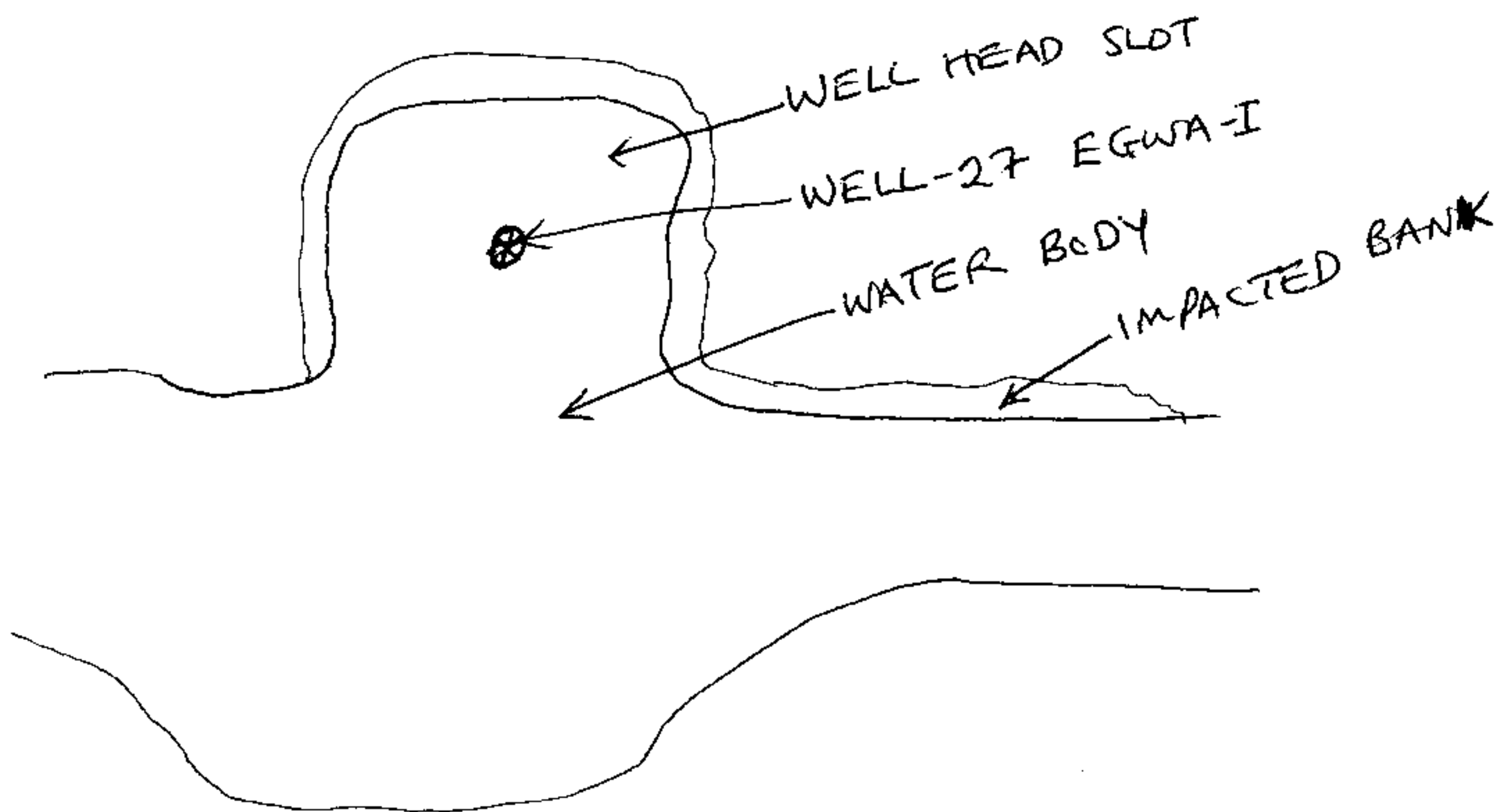
C. Fish/Nets/Ponds

S/N	Fish/Nets/Ponds	Description	Quantity/Size	Comments
	NONE WITHIN AREA OF IMPACT			

D. Others (Specify) i.e. Animal Traps

S/N	Others	Description	Quantity/Size	Comments
	NONE WITHIN AREA OF IMPACT			

E. GRAPHIC DESCRIPTION OF LEAK POINT (Details should be contained in leak repair report)





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G. INCIDENT INFORMATION:

17 Impacted Area Details

- a. Total calculated area of impact 7611.75 m²
- Impact within SPDC R.O.W 7611.75 m²
 - Impact outside R.O.W NIL

18 Volume of oil recovered before completion of JIV (V_{rec}):

Recovered oil V_{rec} : 519 barrels

(THIS IS THE ESTIMATED VOLUME OF OIL IN SEIZED "COTONOU BOAT" USED BY THE OIL THIEVES, WHICH DID NOT SPILL INTO THE ENVIRONMENT.)

19. Computation of the residual volume on site

a. Computation of the volume of pooled free phase oil (on land or confined water body).

- i. Area (m²) occupied by pool of free phase oil _____
- ii. Average Depth (m) of pool of free phase oil _____
- iii. _____

Volume of pooled of free phase oil. V_{pool} : NIL barrels

iv. _____

b. Computation of volume of infiltrated oil in the soil (V_3).

- i. Area (m²) covered by the oil: 2361.75 m²
- ii. Average Depth (m) below ground surface of infiltration of oil: 0.002 m
- iii. Soil type: CLAY
- iv. ρ_e (effective porosity of the soil): 8%

v. _____

Volume of infiltrated oil. V_{inf} : 2.38 barrels

20. Computation of volume of oil on open water based on standard coloration.

	Thickness (mm)	Percentage coverage	Volume (m ³)
Barely Visible	0.00004	50%	0.0045
Silvery	0.00008	30%	0.0054
Slight Colour	0.00015	20%	0.0068
Bright Colour	0.0003		
Dull	0.001		
Dark	0.002		
Black oil	0.1		
Emulsion (30% Oil)	1		
	Percent Total	100%	Total Volume

2625 m²
1575 m²
1050 m² } 5250 m²

0.1 bbl

Spill Factors from USCG FOG (2000 Edition)

Volume of oil on open water V_{wat} :0.1

barrels

21. Calculation of evaporated volume:

i. Oil type: BONNY MEDIUMii. E-Factor: 15%

iii.

Volume of evaporated oil. V_{vap} :0.44

barrels

Oil Type		Bonny Light	Bonny Medium
		E-Factor	E-Factor
Period Since Oil Spill	<1 day	10%	5%
	1-7 days	25%	15%
	>7 days	40%	25%

9. Gross Total Estimated Spilled Volume $V_{Est}(bbls) = V_{vap}(bbls) + V_{wat}(bbls) + V_{inf}(bbls) + V_{pool}(bbls) + V_{recJ}(bbls)$ $V_{Est}(bbls) = 2.38 + 0.1 + 0.44 = 2.92 \text{ bbls}$ 10. Net Total Estimated Spilled Volume $V_{Est}(bbls) = V_{vap}(bbls) + 0.6 \cdot V_{wat}(bbls) + V_{inf}(bbls) + V_{pool}(bbls) + V_{recJ}(bbls)$ $V_{Est}(bbls) = 2.38 + (0.6 \times 0.1) + 0.44 = 2.88 \text{ bbls}$

* Calculation of the respective estimated volume is to done using the new spill estimation software on site

* Conversion of m3 to barrel is Total volume VT (m3) x6.29

* Emulsification factor for spill on water to consider is 60% of volume of oil.

This report was filled and signed on the 01 / 02 / 2011 at incident site by joint investigation representative from

- Host Community ☒
- Department of Petroleum Resources [DPR]: ☒
- National Oil Spill Detection and Response Agency [NOSDRA]: ☒
- State Ministry of Environment [SME]: ☒
- Nigeria Police Force [NPF]: ☐
- Shell Petroleum Development Company [SPDC]: ☒

Tick as applicable