



No. 00611

**A. GENERAL INFORMATION:**

1. Spill incident Number: 625818
2. Name of Location 18" SOKY - EKULAMA TRUNKLINE
3. Name of nearest community KIRIKAKIRI
4. State RIVER LGA AKUKY - TORU
5. Type of Production facility/Installation TRUNKLINE Asset owner /District ULG/PL/NE-SP.

**B. INCIDENT INFORMATION:**

6. Details of incident

- a. Date of incident 22ND FEBRUARY 2011
- b. Date/Period of investigation, 28<sup>TH</sup> FEBRUARY, TO 2<sup>ND</sup> MARCH, 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: <u>NOT APPLICABLE</u>  |      |      |
| <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). <u>NOT APPLICABLE</u>       |      |      |

AFTER JOINT INVESTIGATION OF THE INCIDENT, SPILL WAS DUE TO THIRD PARTY INTERFERENC

e. Spill point coordinates

Northing: 04° 34' 13.1" Easting: 006° 40' 20.2"



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C. RISK/DAMAGE ASSESSMENT

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 [ ,m]
- Drinking water source [ ,m]
- Built up area [ ,m]
- Farmlands [ ,m]
- Fish Farm/Pond [ ,m]
- Fishing net [ ,m]
- Others (specify). [ ,m]

} NOT APPLICABLE

9. Containment measures put in place;

- Booms [Y] [N] ✓
- Trench [Y] [N] ✓
- Dyke [Y] [N] ✓

Others: NOT APPLICABLE

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.				



B. Crops/Economic Trees

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

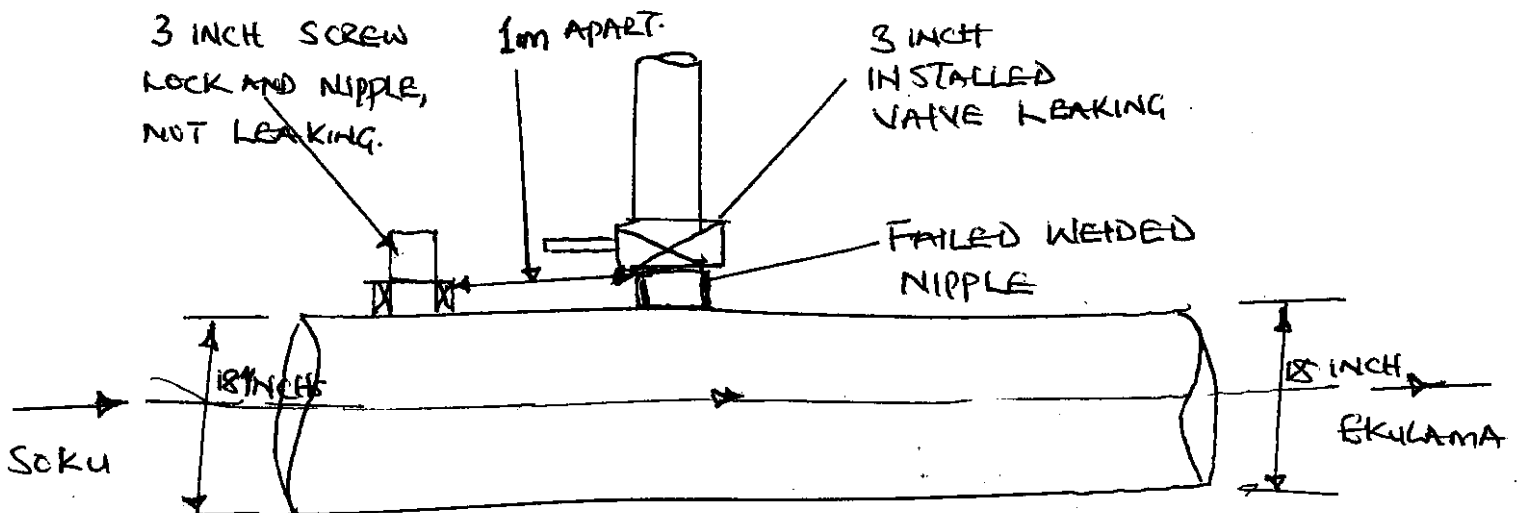
C. Fish/Nets/Ponds

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)



FAILED WELDED 3 INCH NIPPLE AND VALVE WAS FOUND INSTALLED ON THE 18 INCH SOKU - EKULAMA TRUNKLINE AT 12° CLOCK POSITION





No. **0811**

**G. INCIDENT INFORMATION:**

**17 Impacted Area Details**

- a. Total calculated area of impact 0.4495 HA
- Impact within SPDC R.O.W 0.4495 HA
  - Impact outside R.O.W NIL

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

Recovered oil  $V_{rec}$ : 

NIL	barrels
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SPILL POINT  
AREA IS A

**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 ( $m^2$ ) occupied by pool of free phase oil 95  $m^2$

TIDE DOWN

ii. Average Depth (m) of pool of free phase oil 0.001m

AREA IS

iii.

Volume of pooled of free phase oil,  $V_{pool}$ : 

0.60	barrels
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CLOSE TO OPEN  
WATER, THERE

iv.

b. Computation of volume of infiltrated oil in the soil ( $V-3$ ).

i. Area ( $m^2$ ) covered by the oil: 400  $m^2$

FOR INFILTRATION  
OF OIL INTO SOIL  
IS HIGHLY  
LIMITED.

ii. Average Depth (m) below ground surface of infiltration of oil: 0.0015m

iii. Soil type: CLAY

iv.  $P_e$  (effective porosity of the soil): 8 1/6

v.

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

	Thickness (mm)	Percentage coverage	Volume ( $m^3$ )
Barely Visible	0.00004	<del>_____</del>	<del>_____</del>
Silvery	0.00008	<del>_____</del>	<del>_____</del>
Slight Colour	0.00015	100%	0.006 $m^3$
Bright Colour	0.0003	<del>_____</del>	<del>_____</del>
Dull	0.001	<del>_____</del>	<del>_____</del>
Dark	0.002	<del>_____</del>	<del>_____</del>
Black oil	0.1	<del>_____</del>	<del>_____</del>
Emulsion (30% Oil)	1	<del>_____</del>	<del>_____</del>
	Percent Total	100%	Total Volume

AREA IMPACTED IN  
OPEN WATER = 4000  $m^2$

0.38	bbl
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Spill Factors from USCG FOG (2000 Edition)



Volume of oil on open water $V_{wat}$	<u>0.38</u>	barrels
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21. Calculation of evaporated volume:

- i. Oil type: BONNY LIGHT
- ii. E-Factor: 25%
- iii.

Volume of evaporated oil $V_{ev}$	<u>0.43</u>	barrels
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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  $V_{Est}(bbls) = V_{vap}(bbls) + V_{wat}(bbls) + V_{inf}(bbls) + V_{pool}(bbls) + V_{recJ}(bbls)$

$V_{Est}(bbls) = 0.38 + 0.30 + 0.60 + 0.43 = 1.71 BBLs$

10. Net Total Estimated Spilled Volume  $V_{Est}(bbls) = V_{vap}(bbls) + 0.6 * V_{wat}(bbls) + V_{inf}(bbls) + V_{pool}(bbls) + V_{recJ}(bbls)$

$V_{Est}(bbls) = (0.38 + 0.60 * 0.6) + 0.30 + 0.43 = 1.318 BBLs \approx 1.32 BBLs$

\* 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 07/03 /20 11 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*