



No. 01628

**A. GENERAL INFORMATION:**

1. Spill incident Number: 703633
2. Name of Location 6 INCH UTORUGU - UGHELLI WEST GAS LINE @ IWREKHAM
3. Name of nearest community IWREKHAM, EDIOPHE AND OTOR - EDO
4. State DELTA LGA UGHELLI SOUTH
5. Type of Production facility/Installation GAS LINE Asset owner /District PIPELINE

**B. INCIDENT INFORMATION:**

6. Details of incident

- a. Date of incident 23/8/2011 @ 1600 HRS
- b. Date/Period of investigation, 23/8/2011 @ 1330 HRS
- c. Description of spill point environment

- |   |     |     |
|---|-----|-----|
| <input type="checkbox"/> Firmed soil                          | [Y] | [N] |
| <input type="checkbox"/> Loose soil                           | [Y] | [N] |
| <input checked="" type="checkbox"/> Previously excavated area | [Y] | [N] |
| <input checked="" 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 checked="" type="checkbox"/> Others (specify), <u>EQUIPMENT DAMAGE</u> | [Y] | [N] |

**[DUE TO NEW PIPELINE CONSTRUCTION  
 ALONG RIGHT OF WAY]**

e. Spill point coordinates

Northing:

159731m

Easting:

384381m



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C. RISK/DAMAGE ASSESSMENT

7. Type of environment of spill site:

- Land
- Swamp (SEASONAL)
- water

Type of environment of which oil has spread:

- Land
- Swamp (SEASONAL)
- water

8. Distance from the nearest sensitive habitat

- Government reserved and designated protected area [NIL,m]
- Drinking water source [NIL,m]
- Built up area [NIL,m]
- Farmlands [NIL,m]
- Fish Farm/Pond [NIL,m]
- Fishing net [NIL,m]
- Others (specify) [NIL,m]

9. Containment measures put in place;

- Booms [X] [N]
- Trench [Y] [N]
- Dyke (EARTH) [X] [N]
- Others: \_\_\_\_\_

10. Any pictures or video coverage? [X] [N]

11. Was there any disruption to the investigation? [Y] [N]

If yes give brief description:

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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					

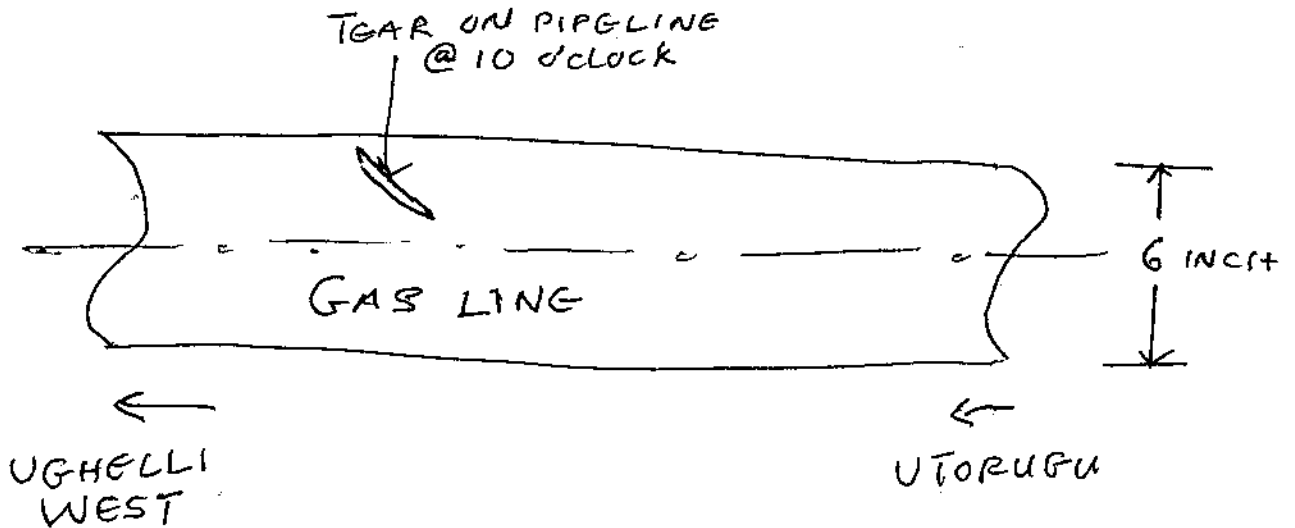
C. Fish/Nets/Ponds

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)





F: TABLE SHOWING SOME OF COORDINATES TAKEN DURING JIV FOR AREA CALCULATION  
E. Coordinates

S/N	Northing	Easting
	159734	384368
	159731	384381
	159734	384383
	159734	384388
	159730	384388
	159724	384390
	159725	384387
	159727	384385
	159720	384380
	159722	384376
	159726	384377
	159728	384370
	159719	384385
	159724	384390
	159726	384406
	159726	384419
	159729	384442
	159702	384427
	159702	384427
	159729	384442
	159715	384456



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**G. INCIDENT INFORMATION:**

**17 Impacted Area Details**

- a. Total calculated area of impact 1,124.15 M<sup>2</sup>
- Impact within SPDC R.O.W 532 m<sup>2</sup>
  - Impact outside R.O.W 592.15

**18 Volume of oil recovered before completion of JIV (V<sub>recj</sub>):**

Recovered oil V <sub>recj</sub> :	<u>NIL</u>	barrels
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**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<sup>2</sup>) occupied by pool of free phase oil 1,124.15 M<sup>2</sup>
- ii. Average Depth (m) of pool of free phase oil 0.002
- iii. EMULSIFICATION FACTOR APPLIED IS 60%  
 Volume of pooled of free phase oil: V<sub>pool</sub>: 

<u>5.66</u>	barrels
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- iv.

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

- i. Area (m<sup>2</sup>) covered by the oil: NIL
- ii. Average Depth (m) below ground surface of infiltration of oil: NOT APPLICABLE
- iii. Soil type: NOT APPLICABLE
- iv. p<sub>e</sub> (effective porosity of the soil): NOT APPLICABLE
- v.

Volume of infiltrated oil V <sub>inf</sub> :	<u>NIL</u>	barrels
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**20. Computation of volume of oil on open water based on standard coloration.**

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

NOT APPLICABLE

Spill Factors from USCG FOG (2000 Edition)



Volume of oil on open water  $V_{wat}$ : Nil barrels

21. Calculation of evaporated volume:

- i. Oil type: BONNY MEDIUM
- ii. E-Factor: 15%
- iii.

Volume of evaporated oil  $V_{vap}$ : 1.00 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  $V_{Est}(bbls) = V_{vap}(bbls) + V_{wat}(bbls) + V_{inf}(bbls) + V_{pool}(bbls) + V_{recJ}(bbls)$

$V_{Est}(bbls) =$  6.65 BBLs

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

$V_{Est}(bbls) =$  6.65 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 25/08/2011 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