



No. 00021

A. GENERAL INFORMATION:

- 1. Spill incident Number: 621008
- 2. Name of Location IMO RIVER WELL 371 FLOWLINE
- 3. Name of nearest community IGIRLUKWU OWAZA
- 4. State ABIA LGA UKWA - WEST
- 5. Type of Production facility/Installation FLOWLINE Asset owner /District NELL / PH 2

B. INCIDENT INFORMATION:

6. Details of incident

- a. Date of incident 9TH FEBRUARY, 2011
- b. Date/Period of investigation, 14TH FEBRUARY, 2011
- c. Description of spill point environment

- Firmed soil [Y] [N]
- Loose soil [Y] [N]
- Previously excavated area [Y] [N]
- Under water [Y] [N]
- Swampy [Y] [N]
- Exposed pipe surface [Y] [N]

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

- Drilled hole, [Y] [N]
- Hack saw cut, [Y] [N]
- Explosive tear, [Y] [N]
- Complete Rupture [Y] [N]
- Inward dent, [Y] [N]
- Well head tampering [Y] [N]
- Failed Weld-on illegal hot tap valve, [Y] [N]
- Missing pipeline (flowline) [Y] [N]
- Crude oil theft (illegal bunkering) point, [Y] [N]
- Third party tampering with Clamp Bolt/Nut, [Y] [N]
- Third party tampering with valve setting, [Y] [N]
- Third party tampering with flange Nuts/bolts, [Y] [N]
- Corrosion, [Y] [N]
- Type: _____
- Saver-pit over flow, [Y] [N]
- Surge vessel overflow, [Y] [N]
- Outward dent [Y] [N]
- Others (specify). _____

AFTER DUE INVESTIGATION OF THE INCIDENT, SPILL WAS FOUND TO BE DUE TO THIRD PARTY INTERFERENCE.

e. Spill point coordinates

Northing: 109218.923mN

Easting: 526928.208mE



No. 0021

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 [NIL ,m FARMLAND OF CASSAVA CROPS WAS IMPACTED.
- Fish Farm/Pond [,m]
- Fishing net [,m]
- Others (specify). [,m]

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					



No. 0021

B. Crops/Economic Trees

S/N	Types of crops	Young	Medium	Matured	Quantity	Comments
1	CASSAVA		✓		APPROXIMATELY 500 STEMS	BUL SPRAY WAS MAJORLY ON STEMS

C. Fish/Nets/Ponds

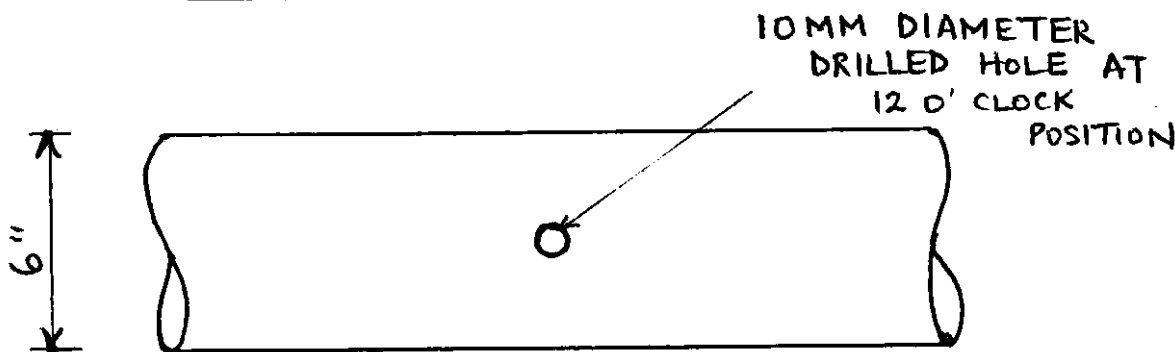
S/N	Fish/Nets/Ponds	Description	Quantity/Size	Comments
		NONE WITHIN AREA OF IMPACT		

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)

SECTION OF IMO RIVER WELL 37L FLOWLINE SHOWING DRILLED HOLE.





No. 0021

G INCIDENT INFORMATION:

17 Impacted Area Details

- a. Total calculated area of impact 0.12 Ha (1,200m²)
- Impact within SPDC R.O.W 1,157 m²
 - Impact outside R.O.W 43 m²

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

Recovered oil V_{recj}: NOT APPLICABLE barrels

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 NOT APPLICABLE
- ii. Average Depth (m) of pool of free phase oil NOT APPLICABLE
- iii.

Volume of pooled of free phase oil. V_{pool}: NOT APPLICABLE barrels

iv.

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

- i. Area (m²) covered by the oil: 1,200
- ii. Average Depth (m) below ground surface of infiltration of oil: 0.001
- iii. Soil type: CLAY
- iv. p_e (effective porosity of the soil): 8%
- v.

[REDACTED] 0.60 barrels

AREA OF IMPACT WAS MAJORLY AS A RESULT OF OIL SPRAY ON VEGETATION, AS SUCH, THERE WAS A MINIMAL INFILTRATION

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

DEPTH OF 1MM (0.001M) INTO SOIL.

	Thickness (mm)	Percentage coverage	Volume (m3)
Barely Visible	0.00004		
Silvery	0.00008		
Slight Colour	0.00015	NOT	
Bright Colour	0.0003		
Dull	0.001	APPLICABLE	
Dark	0.002		
Black oil	0.1		
Emulsion (30% Oil)	1		
Percent Total		100%	Total Volume NOT APPLICABLE bbl

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} :

0.11

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 $V_{Est}(bbls) = V_{vap}(bbls) + V_{wat}(bbls) + V_{inf}(bbls) + V_{pool}(bbls) + V_{recJ}(bbls) = 0.11 + NIL + 0.60 + NIL + NIL = 0.71$

$V_{Est}(bbls) =$ 0.71 BARREL

10. Net Total Estimated Spilled Volume $V_{Est}(bbls) = V_{vap}(bbls) + 0.6 * V_{wat}(bbls) + V_{inf}(bbls) + V_{pool}(bbls) + V_{recJ}(bbls) = 0.11 + NIL + 0.60 + NIL + NIL = 0.71$

$V_{Est}(bbls) =$ 0.71 BARREL

- *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 14 / 02 / 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