JOINT INVESTIGATION REPORT FOR INCIDENT NO: 0333 841313

(Note: As practicable as possible the JIT report is to be signed in the field by all the participating parties)

(110to: 110 presidente de possible une el trop		
A. GENERAL INFORMATION:		
1. Spill incident Number: 841313	2.Type	of incident * ON SPILL
3. Name of Location 12" MO R	VERTE- OG	ALE PIPELINE
4. Name of nearest community <u>0WAZ</u>	<b>A</b> 5. State: <b>A</b>	BIA 6. LGA UKWA - WEST
7. Type of Production facility/Installation	IL PIPELINE 8. A	Asset owner/ District NPE / PH 2
B. INCIDENT INFORMATION:		
9. Details of incident  a. Date of incident: 4 TH  b. Start date/time of investigation: 18  c. Investigation End date: 19 TH  d. Description of spill point environme	ULY, 2012. TH. Tury 201 Tury 2012	12.
☐Firmed soil	Loose soil	Previously excavated area
☐Under water	Swampy	Exposed pipe surface
☐ Well Plateform (on Water)		$\square_{\mathrm{Rig}}$
e. Description of leak point (tick as ap	plicable);	
Drilled hole	Hack saw cut	☐Explosive tear,
Complete Rupture	☐ Inward dent,	☐ Well head tampering
Failed Weld-on illegal hot tap va	ilve,	☐Missing Pipeline/Flowline)
Crude oil theft (illegal) bunkerin	g) point,	☐ Third party tampering with Clamp
Third party tampering with valve	e setting,	☐ Third party tampering with flange,
Corrosion	Saver-pit over flow,	☐ Surge vessel overflow
	☐Flare System/Bund v	
□Valve Failure	Com unit failure	Cold vent
Relief valve failure	Others (specify)	
	, <u> </u>	
f. Incident caused by:  Third party interference	Operational	□ <sub>Mystery</sub>
g. Spill point coordinates  Measuring unit 19121465	M10-B	ELT (MINNA)
POINT C Northing:		Easting:
(LEAK 1) 10361108	\$	524766.75
POINT 1 1 1	-	•
NON- 2) 1038261		524767.18
POINTS POINTS		•
AND B)		<u>.</u>

JOINT INVESTIGATION REPORT FOR INCIDENT NO: 0383 841313

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10.	Туре о	f environment:						
<b>⊄</b> Lan	ıd	□ Swamp	□ Water	□ Seas	onal swa	mp		
i.	Type of	environment to	which oil has spre	ead:				
<b>⊄</b> Lan	ıd .	□ Swamp	☐ Water	□ Rive	er (identif	ÿ)		
ii.	Weather	r condition						
		☐Sunny e nearest sensiti	ve habitat				•	
□ Drii □ Bui □ Fisl □ Fisl □ Oth	nking wa ilt up area mlands h Farm/Po hing net ners (spec	iter source ond rify).		d area	اسما احسام اسما اسما اسما	,m] ,m] ,m] ,m] ,m]	FARMLAND SLIGHTLY	IMPACTED.
□ Boo	oms	☐ Trench	□ Dyke					
<b>✓</b> Oth	ers:	NOT AP	PLICABLE		_			
13. Any pic	tures or v	rideo coverage?			[Y]	[N]	]	
14. Was the	ere any di	sruption to the i	nvestigation?		[ Y]	[ N.		
es give brief o	descriptio	on:	1					
N	0		APP	110	Af	3L	E	
	i.  Lan  ii.  Raii  11. Distance  Go  Dri  Bui  Far  Fisi  Oth  12. Contain  Boo  Oth  13. Any pic	i. Type of Land  ii. Weather Raining 11. Distance from th Government Drinking wa Built up area Farmlands Fish Farm/P Fishing net Others (spec	i. Type of environment to  Land Swamp  ii. Weather condition  Raining Sunny  11. Distance from the nearest sensiti  Government reserved and de Drinking water source Built up area Farmlands Fish Farm/Pond Fishing net Others (specify).  12. Containment measures put in pla  Booms Trench  Others: OT AP  13. Any pictures or video coverage?	i. Type of environment to which oil has spread and swamp   Water ii. Weather condition   Raining   Sunny   Sunny   Sunny   Sunny   Sunny   Sunny   Sunny   Water ii. Weather condition   Raining   Sunny   Sun	i. Type of environment to which oil has spread:  Land Swamp Water River  ii. Weather condition  Raining Sunny  11. 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).  12. Containment measures put in place; Booms Trench Dyke  Others: NOT APPLICABLE  13. Any pictures or video coverage?	i. Type of environment to which oil has spread:  Land Swamp Water River (identify ii. Weather condition  Raining Sunny  11. Distance from the nearest sensitive habitat  Government reserved and designated protected area Sunit up area Sunit up area Sunny  Farmlands Signated Farmlands Signated Fish Farm/Pond Signated Fishing net Others (specify).  12. Containment measures put in place;  Booms Trench Dyke  Others: Not Applicable  13. Any pictures or video coverage?  [Y]	i. Type of environment to which oil has spread:  Land Swamp Water River (identify)  ii. Weather condition  Raining Sunny  11. Distance from the nearest sensitive habitat  Government reserved and designated protected area miles are miles	i. Type of environment to which oil has spread:  Land Swamp Water River (identify)  ii. Weather condition  Raining Sunny  11. Distance from the nearest sensitive habitat  Government reserved and designated protected area multiple in the printing water source multiple in the printing water water water water water water water water wate

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

15. Structures / Properties

S/N	Type of Structures	Description	Size	Number	Comments
	\				
			4		
H	<del>                                     </del>	hTu	1 A F	TX OF	1) 40 4 0
	ACIAL A	y l lette	V /1		IMPAC.

JOINT INVESTIGATION REPORT FOR INCIDENT NO: \_\_\_\_\_\_ 6383 8413

#### 16. Crops/Economic Trees

S/N	Type of crops	Young	Medium	Matured	Quantity	Comments
1	MAIZE				4	IMPA-CTED
	1 + (t-1 1 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -					PLANTS
						WITHIN
						FARMLAND

#### 17. Fish/Nets/Ponds

S/N	Fish/Nets/	Ponds	Description		Quant	tity/Size	Comments
1				<del>/ 1</del>	<u> </u>		
	ANF	$-\lambda \lambda h^{2}$	TUN	ARI	Δ	UE I	MPACT
1-4	O 1 4 5	₩¥ t	1 11114	TINE	71	OI TI	TILL

#### 18. Others (Specify) i.e. Animal Traps

S/N	Others	Description	ı	Quantity/S	Size	Comm	ents
				_			<u> </u>
	TIAC	\ <del></del>	A 0 = 0	0E	IN AD	A ~~T	<u> </u>
		1X/11   H1X	<u>AKEA</u>	UE		$H \cup I$	
	(	_ <b>V V I</b>   I I I I I I I					

E. GRAPHIC DESCRIPTION OF LEAK POINT While detail report of the leak point should be contained in the Leak report, overview sketch of the site should be added as an appendix 1) CLIPS SECTION OF 12" IMO RIVERIT - OGALE ENDS OF PIPELINE AT OWAZA CRUDE OIL THEFT HOSES. ELBOWS SHOWING POSITIONS OF CRUDE OIL THEFT FITTINGS. 2" PIPES 2" NUPPLES WITH BALL POINT **ILLEGAL** (2NO) POINT AT 12 0' CLOCK CLAMP FITTING. Positions .EAK 250MA POINT. (Point c). 212 M

Page 3 of 9

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IMO RIVER I

# THE SHELL PETROLEUM DEVELOPMENT COMPANY OF NIGERIA LIMITED JOINT INVESTIGATION REPORT FOR INCIDENT NO: 0383 841313

F: TABLE SHOWING SOME OF COORDINATES TAKEN DURING JIV FOR AREA CALCULATION 19. Impacted area boundary Coordinates (If more than 12 points, Attach as an appendix 2)

		MINNA (MID-BELT)
S/N	Northing METER>	Easting METELS
Į.	103610.79	52476977
	103610.79	5 24 763 - 61
3.	103614:15	524766.76
4	103614-14	524769.84
<del></del>		
<b></b>		
! 		

#### G. INCIDENT INFORMATION:

20	Impacted	A	The 4 - 11 -
ZU.	impacied	Атея	Details

	Total calculated area of impact O · 002 Hq	
	Impact within SPDC R.O.W	•
	Impact outside R.O.W	•
21.	Volume of oil recovered before completion of JIV (V <sub>recJ</sub> ):	•
	Recovered oil Val	barrels
20.	Computation of the residual volume on site	<del>_</del>
<b>a</b> .	Computation of volume of pool of 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	CABLE

#### THE SHELL PETROLEUM DEVELOPMENT COMPANY OF NIGERIA LIMITED 0383 Q JOINT INVESTIGATION REPORT FOR INCIDENT NO: iii. Emulsification factor: iv. Volume of pool of free phase oil. V pool: barrels Computation of volume of infiltrated oil in the soil (V<sub>inf</sub>). Area \*(m2) covered by the oil:\_\_\_\_\_ i ií Area of the pool of free phase oil in touch with soil: Nii Average Depth (m) below ground surface of infiltration of oil: Soil type: \_\_\_\_CLAY iv $P_{\rm e}$ (effective porosity of the soil). ¥ Volume of infiltrated oil. Vint. barrels 21. Computation of volume of oil on open water based on standard coloration. i. Total area of oil on open water: ii. Table of average depth of oil on water based on coloration \*\* Thickness Percentage Volume (m3) (mm) coverage **Barely Visible** 0.00004 Silvery 0.00008 Slight Color 0.00015 Bright Color 0.0003 Dull 0.001 Dark 0.002 Blackoil 0.1 Emulsion (30% Oil) 1 Percent Total 100% Total Volume bbl įij. barrels ΝII 22. Calculation of evaporated volume: Oil type: BONNY MEDIUM E-Factor: 157. ii. ili. Volume of evaporated oil. V evap **0-14**

Evapor	Evaporation Factors (E-Factor) for SPDC Crude oil						
Oil Type	Days on site	Bonny Light	Bonny Medium				
Period Since Oil Spill	< 1 day	10%	5%				
	1-7 days	25%	15%				
	> 7 days	40%	25%				

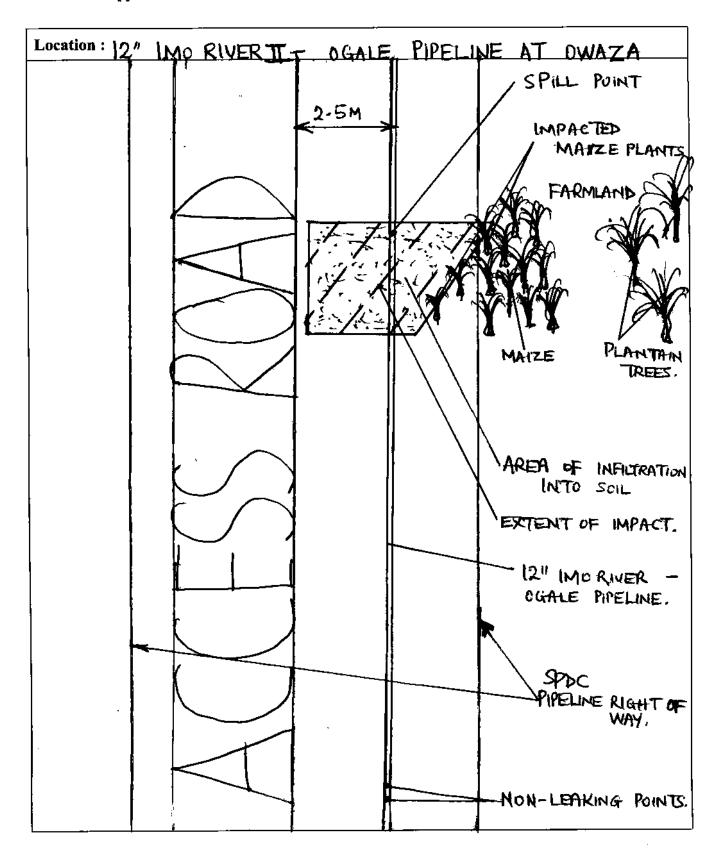
<sup>\*</sup>If area is not same as the total area of impact, please indicate in the overview sketch \*\* Spill Factor from USCG FOG (2000 Edition)

JOINT INVESTIGATION REPORT FOR INCIDENT NO: 0383 841313
23. Gross Total Estimated Spilled Volume  0.14+ NiL+ 0.81+ NIL+NIL = 0.95
$V_{Est}(bbls) = V_{evap}(bbls) + V_{wat}(bbls) + V_{inf}(bbls) + V_{pool}(bbls) + V_{rec}(bbls)$
VER (bbls)= BARREL
24. Net Total Estimated Spilled Volume  24. Net Total Estimated Spilled Volume  0.14+ NIL+ 0.81+ NIL+ NIL+ 0.95
$V_{Est}(bbls) = V_{evap}(bbls) + 0.6*V_{wat}(bbls) + V_{inf}(bbls) + V_{pool}(bbls) + V_{recl}(bbls)$
VEst(bbls)= BARREL
*Calculation of the respective estimated volume is to be done on site as far as practicable using the new spill volume
estimation software on site *Conversion of m3 to barrels is Total volume VT (m3) x 6.29
*Emulsification factor for spill on water to consider is 60% of volume of oil.
25. GENERAL STATUS OF THE SITE
A. Joint investigation of the incident site found that there is no residual impact after the
initial response and therefore recommend that the site be closed out 🗖
B. Investigation of the incident site showed that there is residual impact on site requiring
further works
26 REPRESENTATIVES
20 REFRESENTATIVES
This report was filled and signed on the investigation representatives 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

JOINT INVESTIGATION REPORT FOR INCIDENT NO: 0383 841313

#### 27. Appendix 1: Overview sketch of the site



JOINT INVESTIGATION REPORT FOR INCIDENT NO: 841313

# 21. Appendix 2:TABLE SHOWING ADDITIONAL COORDINATES TAKEN DURING JIV FOR AREA CALCULATION

S/N	Northing	Easting
	-	· · · · · · · · · · · · · · · · · · ·
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	<del>/</del>	
$-\!\!\!\!/$	<del></del>	