

JOINT INVESTIGATION REPORT

INCIDENT NO: 173 66 55 JIV report S/N: Nº 0000375

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

A. GENERAL INFORMATION:

1. Spill incident Number: 173 66 55 2. Type of incident* OIL SPILL
3. Name of Location 6" KANBO WELLS - 7S AND 9T FLOWLINES
4. Name of nearest community AGBIDIAMA 5. State: BAYELSA 6. LGA EKEREMOR
7. Type of Production facility/Installation FLOWLINES
8. Asset owner/District THE SHELL PETROLEUM DEVELOPMENT COMPANY OF

B. INCIDENT INFORMATION: NIGERIA LIMITED / SWAMP WEST

9. Details of incident

- a. Date of incident: 17TH OCTOBER, 2016
b. Start date/time of investigation: 25TH OCTOBER, 2016 AT 1325HRS
c. Investigation End date: 25TH OCTOBER, 2016 Actual investigation duration, days: ONE DAY
d. Description of spill point environment

- | | | |
|---|--|--|
| <input type="checkbox"/> Firm soil | <input type="checkbox"/> Loose soil | <input type="checkbox"/> Recently excavated area |
| <input checked="" type="checkbox"/> Under water | <input checked="" type="checkbox"/> Swampy | <input type="checkbox"/> Exposed pipe surface |
| <input type="checkbox"/> Well Platform (on Water) | <input type="checkbox"/> Drill Rig | |

Additional observations around the spill point: UPON LIFTING, THE JIT OBSERVED THAT 6" KANBO WELLS - 7S AND 9T FLOWLINES WERE COMPLETELY CUT THROUGH WITH HACK-SAW AND A 6" VALVE WITH FLEXIBLE HOSE WAS ILLEGALLY ATTACHED AT ONE OF THE TWO CUT ENDS OF KANBO - 7S, WHILE A 3" VALVE WAS ILLEGALLY ATTACHED TO KANBO - 9T AT 12 O' CLOCK POSITION.

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

- | | | |
|--|--|--|
| <input type="checkbox"/> Drilled hole. | <input checked="" type="checkbox"/> Hack saw cut | <input type="checkbox"/> Tear (_____). |
| <input type="checkbox"/> Complete Rupture | <input type="checkbox"/> Inward dent, | <input type="checkbox"/> Well head tampering |
| <input checked="" type="checkbox"/> Failed Weld-on illegal hot tap valve | <input type="checkbox"/> Failed Clamp, | <input type="checkbox"/> Missing Pipeline/Flowline |
| <input checked="" type="checkbox"/> Crude oil theft (illegal bunkering) point, | <input type="checkbox"/> Saver-pit over flow | <input type="checkbox"/> Third party tampering with Clamp |
| <input type="checkbox"/> Third party tampering with valve setting | <input type="checkbox"/> Bulging Outward | <input type="checkbox"/> Third party tampering with flange, |
| <input type="checkbox"/> Flare System/Bund wall failure | <input type="checkbox"/> Cold vent | <input type="checkbox"/> Surge vessel overflow, |
| <input type="checkbox"/> Valve Failure | <input type="checkbox"/> Relief valve failure | <input type="checkbox"/> Accidental 3 rd party equipment impact |
| <input type="checkbox"/> Others(specify) _____ | | |

f. Incident caused by:

- Third party interference (Sabotage ; crude theft ; Line theft ; Accidental 3rd party damage
 Operational Others (including Mystery spills) _____

*This can be; a) Oil Spill b) Drilling fluid/Chemical c) Siltation d) construction e) Encroachment f) Fire.

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g. Spill point coordinates **(THEFT POINTS)**
 h. Measuring unit **WAS 84**

Northing:	Easting:
SP1 = 04.88127	005.65106
SP2 = 04.88124	005.65104

C. RISK ASSESSMENT

10. Type of environment:

- Land
 Swamp
 Water
 Seasonal swamp
 Shoreline/Waterfront

i. Type of environment to which oil has spread:

- Land
 Swamp **(TIDAL)**
 Water
 River (identify) _____

ii. Weather condition

- Rain
 Sunny
 Dry
 Wet
 Windy
 Hot
 cool

11. Distance from the nearest sensitive habitat

- | | | | | | |
|--|---|---|----|---|---------------------------------|
| <input type="checkbox"/> Government reserved and designated protected area | [| , | m] | } | NONE WITHIN THE VICINITY |
| <input type="checkbox"/> Drinking water source | [| , | m] | | |
| <input type="checkbox"/> Built up area | [| , | m] | | |
| <input type="checkbox"/> Farmlands | [| , | m] | | |
| <input type="checkbox"/> Fish Farm/Pond | [| , | m] | | |
| <input type="checkbox"/> Fishing net | [| , | m] | | |
| <input type="checkbox"/> Others (specify): | [| , | m] | | |

12. Containment measures put in place;

- Booms
 Trench
 Dyke
 Natural depression
 Pit
 None
- Others: _____

13. Any pictures or video coverage? [Y] [N]

14. Further response/repair initiated as at the time of JIV? [Y] [N]

If yes to item 14, give brief description:

NOT APPLICABLE

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

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If yes to item 15 give brief description: NOT APPLICABLE

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

16. Structures / Properties

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

17. Crops/Economic Trees

S/N	Type of crops	Young	Medium	Matured	Quantity	Comments
1-	MANGROVES	FEW	LOT	FEW	LOT	OIL STAINED
/ / / / / / /						

18. Fishing Nets/Fish Ponds

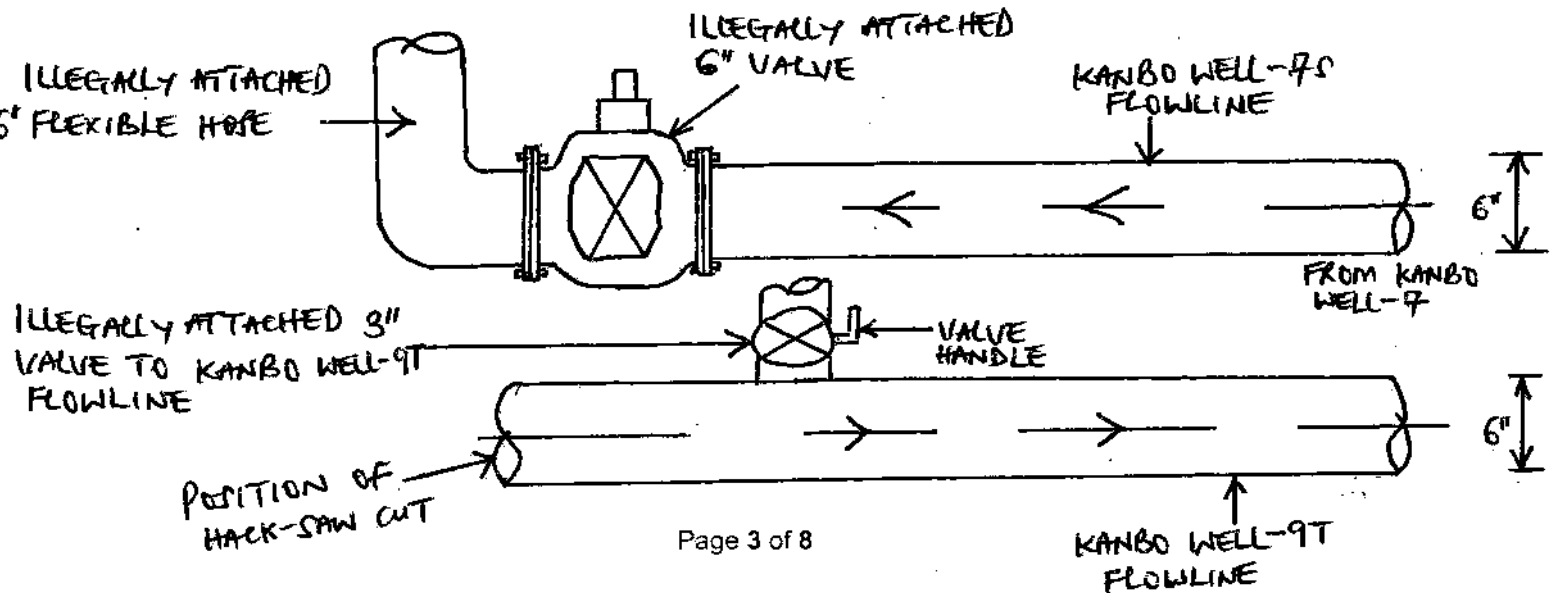
S/N	Nets/Ponds	Description	Quantity/Size	Comments
NONE WITHIN AREA OF IMPACT				

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

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

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)

SECTIONS OF 6" KANBO WELLS - 7S AND 9T FLOWLINES AT AEBIDIAMA SHOWING POSITIONS OF HACK-SAW CUT AND THEFT POINTS



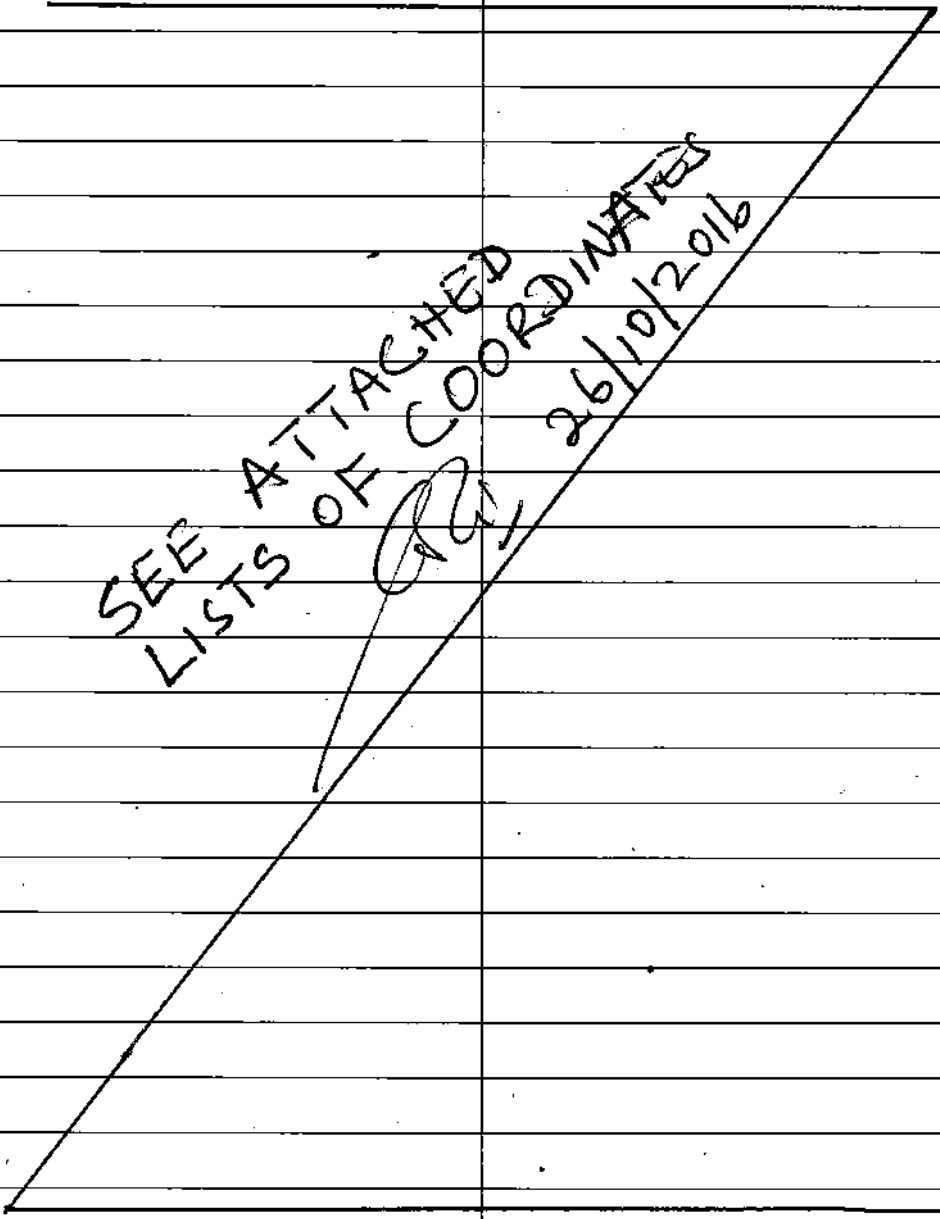
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F: TABLE SHOWING SOME OF COORDINATES TAKEN DURING JIV FOR AREA CALCULATION

20. Impacted area boundary Coordinates (If more, Print and attach as an appendix)

was 84

S/N	Northing	Easting
		

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LIST OF COORDINATES OF IMPACTED AREA OF 6" KANBO WELLS 7S AND 9T FLOWLINES SPILL AGBIDIAMA

WGS 84

PTS	EASTINGS	NORTHINGS
571	5.65106	4.88127
572	5.65104	4.88124
5710	5.650142	4.881612
573	5.65142	4.88135
575	5.65179	4.88119
5760	5.652297	4.881119
5780	5.65279	4.881119
5800	5.653275	4.880862
5810	5.65329	4.88027
582	5.65299	4.88001
583	5.65252	4.87965
584	5.65191	4.87941
585	5.65167	4.87859
586	5.6514	4.87809
5860	5.651155	4.878242
5850	5.651298	4.878699
5840	5.651712	4.879584
5820	5.652554	4.880113
581	5.65307	4.8803
580	5.65297	4.88048
579	5.65282	4.88063
578	5.65252	4.88067
577	5.65218	4.88054
576	5.65195	4.88082
574	5.65165	4.88101
5712	5.650941	4.881012
5711	5.649992	4.881233
586	5.6514	4.87809
587	5.65064	4.87719
5872	5.650684	4.876558
5880	5.651662	4.875922
5890	5.651876	4.874709
5900	5.652376	4.874495
5910	5.653211	4.874202
591	5.65309	4.87409
590	5.6523	4.87433
589	5.65172	4.87458
588	5.65139	4.87581
5871	5.650327	4.876458
5870	5.650342	4.8772
5860	5.651155	4.878242
5721	5.651162	4.881319
5722	5.650991	4.881405
5723	5.650948	4.881233
5724	5.651127	4.881219

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G. INCIDENT INFORMATION:

a. Impacted Area Details

- Total calculated area of impact OIL ON WATER = 2.91HA } 4.60HA
OIL SHEEN ON WATER = 1.69HA
- Impact within R.O.W YES
- Impact outside R.O.W YES

b. Volume of oil recovered before completion of JIV (V_{recf}):

Recovered oil V_{recf} :	NIL	Barrels
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Controlled recovery/evacuation from source with no impact to environment:

NIL	Barrels
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c. Net Estimated Spilled Volume V_{est} (bbls)* =

181.48 BBLS

Estimated Reported Volume V_{rep} (bbls) =** 182 BBLS

***Notes:**

- Volume estimation was done using an excel based tool. (see attached for details on the calculation)
- Reported spilled volume is an estimate

Write other relevant notes taken into consideration for estimating the spilled in the box below:

NOT APPLICABLE

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 m^3 to barrels is Volume (m^3) x 6.29; **Round up estimated volume to next whole number using the following rules:

- Any spill volume in excess of 1 bbl is rounded up to the next whole number.
- Any spill volume in less than 1 bbl is rounded up to the next 0.1 bbl.

Examples: Calculated volume = 15.3 bbl ----- Reported volume = 16 bbl
 Calculated volume = 0.35 bbl ----- Reported volume = 0.4 bbl
 Calculated volume = 0.01 bbl ----- Reported volume = 0.1 bbl

Wherever this estimation tool is not applicable please refer to paragraph 6c (Deviations) of the JIV procedure to use appropriate steps for volume estimation; record the calculation in a plain sheet of paper and attach to the JIV report.

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d. General Status of the site

- | |
|--|
| i. Joint investigation of the incident site found that there is no residual impact after the initial response and JIT therefore recommend that the site be closed out <input type="checkbox"/> |
| ii. Investigation of the incident site showed that there is residual impact on site requiring further works <input checked="" type="checkbox"/> |

e. Representatives

This report was filled, agreed and signed by the following joint investigation team representatives:

- Host Community:
- Department of Petroleum Resources [DPR]:
- National Oil Spill Detection and Response Agency [NOSDRA]:
- State Ministry of Environment [SME]:
- Asset Owner:
- Signatories agree with reported findings:
- Separate DPR form has been filled out with same findings

Tick as applicable

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f. Appendix 1: Overview sketch of the site

