

(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: 734072 2. Type of incident* OIL SPILL
 3. Name of Location KANIBO WELL 5L FLOWLING @ EGBEMO-ANGALABIRI
EGBEMO-
 4. Name of nearest community ANGALABIRI 5. State: BAYELSA 6. LGA EKEREMO
 7. Type of Production facility/Installation FLOWLING 8. Asset owner/District NWS2

B. INCIDENT INFORMATION:

9. Details of incident
 a. Date of incident: 30/10/2011 @ 1130 HRS
 b. Date/Period of investigation: 3/11/2011 @ 1330 HRS & 25/11/2011 @ 1240 HRS
 c. Description of spill point environment
 Firmed soil Loose soil Previously excavated area
 Under water Swampy Exposed pipe surface
 Well Platform (on Water) Rig
 d. Description of leak point (tick as applicable);
 Drilled hole Hack saw cut Explosive tear,
 Complete Rupture Inward dent, Well head tampering
 Failed Weld-on illegal hot tap valve, Missing Pipeline/Flowline)
 Crude oil theft (illegal bunkering) point, Third party tampering with Clamp
 Third party tampering with valve setting, Third party tampering with flange,
 External Corrosion Internal Corrosion
 Saver-pit over flow, Surge vessel overflow, Outward dent
 Flare System/Bund wall Failure Valve Failure com unit failure
 Cold vent Relief valve failure Others (specify) PINHOLE AND SLIGHT TEAR
 e. Incident due to:
 Third party interference Operational Others (specify _____)

f. Spill point coordinates

Measuring unit	
Northing:	Easting:
<u>99982m</u>	<u>358507m</u>

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

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C. RISK ASSESSMENT

10. Type of environment:

- Land
 Swamp
 Water
 Seasonal swamp

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

12. Containment measures put in place;

- Booms
 Trench
 Dyke

Others: NOT APPLICABLE

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

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

If yes give brief description:

NOT APPLICABLE

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
<u>NONE WITHIN AREA OF IMPACT</u>					

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16. Crops/Economic Trees

S/N	Type of crops	Young	Medium	Matured	Quantity	Comments
1	MANGROVE		YES	YES	LOT	

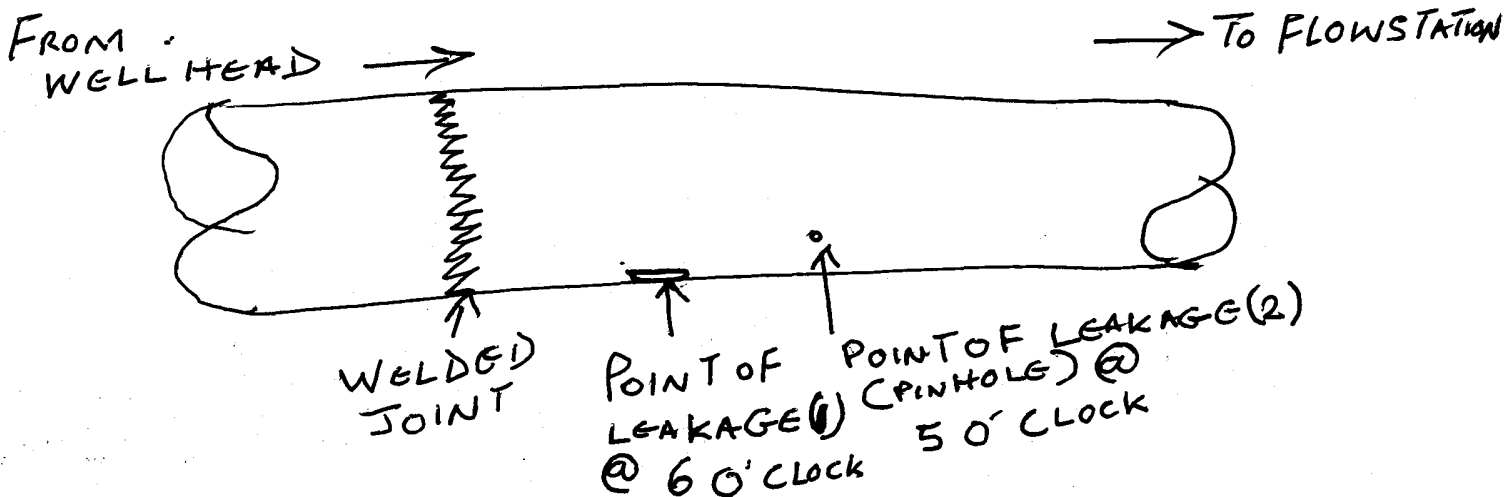
17. Fish/Nets/Ponds

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

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

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

E. GRAPHIC DESCRIPTION OF LEAK POINT (Overview sketch of the site should be added as an appendix 1)



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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)

S/N	Northing	Easting
SP	99982	358507
1	99968	358458
2	99936	358358
3	99996	358547
4	100035	358535
5	100030	358628
6	100037	358658
7	100055	358689
8	99933	358607
9	99901	358652
10	99869	358678
11	99919	358310
12	99890	358320

G. INCIDENT INFORMATION:

20. Impacted Area Details

- Total calculated area of impact 31849.5 M²
- Impact within SPDC R.O.W 5977.59 M²
- Impact outside R.O.W 25871.92 M²

21. Volume of oil recovered before completion of JIV (V_{rec}):

Recovered oil V_{rec} :	<u>NIL</u>	barrels
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20. Computation of the residual volume on site

a. Computation of volume of pool of free phase oil (on land or confined water body).

- Area (m²) occupied by pool of free phase oil NIL
- Average Depth (m) of pool of free phase oil NOT APPLICABLE
- Emulsification factor: NOT APPLICABLE

iv. Volume of pool of free phase oil. V_{pool} :	<u>NIL</u>	barrels
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b. Computation of volume of infiltrated oil in the soil (V_{inf}).

- i. Area (m^2) covered by the oil: NIL
- ii. Area of the pool of free phase oil in touch with soil: NOT APPLICABLE
- iii. Average Depth (m) below ground surface of infiltration of oil: NOT APPLICABLE
- iv. Soil type: NOT APPLICABLE
- v. P_e (effective porosity of the soil): NOT APPLICABLE

iv. Volume of infiltrated oil, V_{inf}	<u>NIL</u>	barrels
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21. Computation of volume of oil on open water based on standard coloration.

- i. Total area of oil on open water: 31849.5 m^2
- ii. Table of average depth of oil on water based on coloration *

	Thickness (mm)	Percentage coverage	Volume (m^3)
Barely Visible	0.00004	20 %	0.000254796
Silvery	0.00008	15 %	0.000382194
Slight Color	0.00015	20 %	0.000955485
Bright Color	0.0003		
Dull	0.001	15 %	0.004777425
Dark	0.002	5 %	0.003184950
Black oil	0.1	15 %	0.477742500
Emulsion (30% Oil)	1	10 %	3.184950000
Percent Total		100%	Total Volume <u>3.67 m^3</u>

iii. Volume of oil on open water, V_{wat}	<u>23.10</u>	barrels
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22. Calculation of evaporated volume:

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

iii. Volume of evaporated oil, V_{evap}	<u>4.08</u>	barrels
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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%

23. Gross Total Estimated Spilled Volume $V_{Est}(bbls) = V_{evap}(bbls) + V_{wat}(bbls) + V_{inf}(bbls) + V_{pool}(bbls) + V_{recj}(bbls)$

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$V_{Est}(bbls) =$ <u>27.2 BBLs</u>
24. Net Total Estimated Spilled Volume $V_{Est}(bbls) = V_{evap}(bbls) + 0.6 * V_{wat}(bbls) + V_{inf}(bbls) + V_{pool}(bbls) + V_{rec}(bbls)$
$V_{Est}(bbls) =$ <u>17.9 BBLs</u>

*Calculation of the respective estimated volume is to be done using the new spill 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.

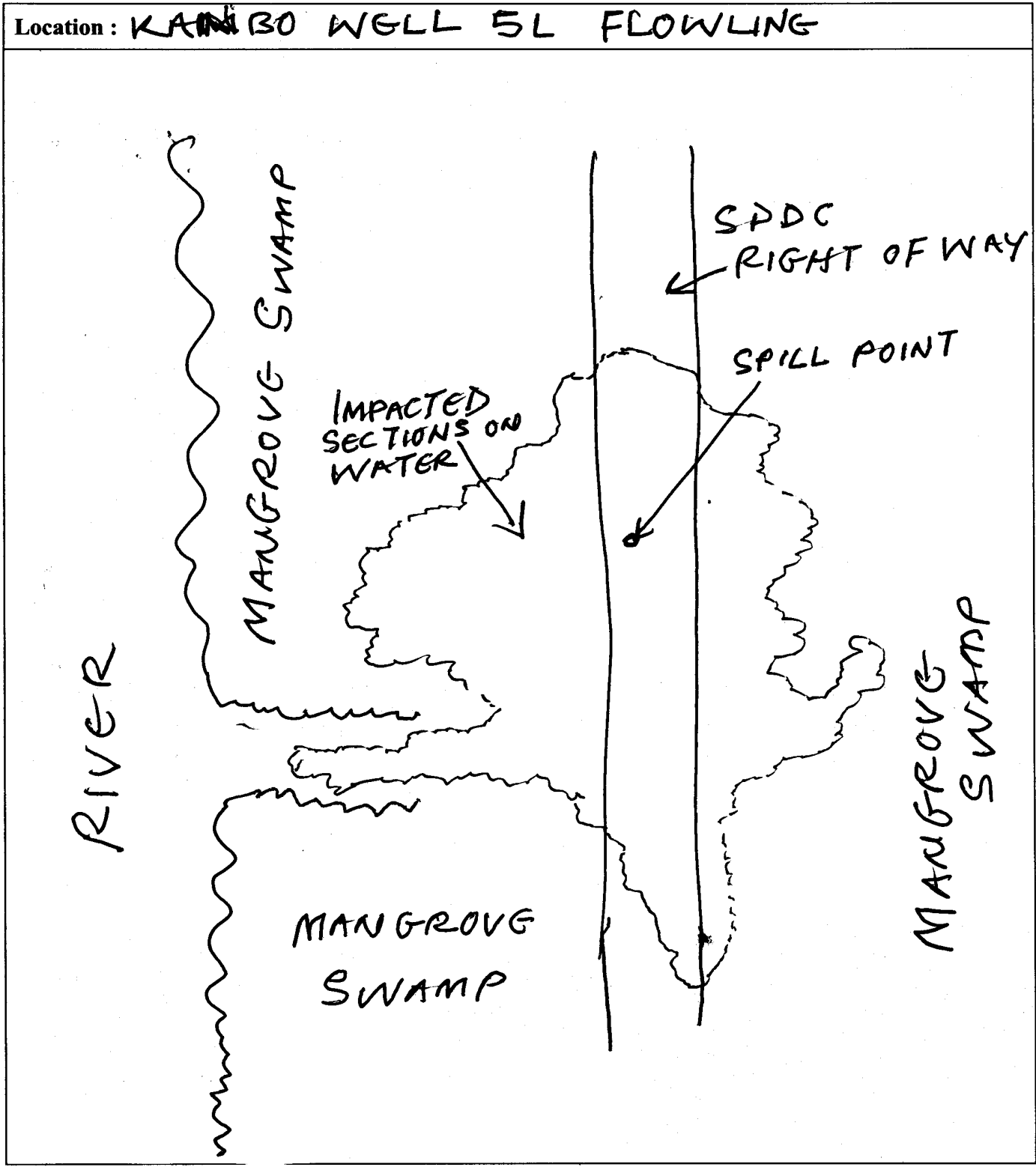
25. GENERAL STATUS OF THE SITE

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 <input type="checkbox"/>
B. Investigation of the incident site showed that there is residual impact on site requiring further works <input checked="" type="checkbox"/>

26 Signatories

<p>This report was filled and signed on the <u>3rd 25/11/2011</u> at incident site by joint investigation representatives from</p> <ul style="list-style-type: none">• Host Community <input checked="" type="checkbox"/>• Department of Petroleum Resources [DPR]: <input type="checkbox"/>• National Oil Spill Detection and Response Agency [NOSDRA]: <input checked="" type="checkbox"/>• State Ministry of Environment [SME]: <input checked="" type="checkbox"/>• Nigeria Police Force [NPF]: <input checked="" type="checkbox"/>• Shell Petroleum Development Company [SPDC]: <input checked="" type="checkbox"/> <p style="text-align: right;"><i>Tick as applicable</i></p>
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20. Appendix 1: Overview sketch of the site



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

S/N	Northing	Easting
13	99953	358300
14	99900	358371
15	99966	358347
16	99931	358473
17	100001	358446
18	99907	358536
19	100019	358492
20	99934	358579
21	100033	358531
22	100034	358532
23	100051	358515
24	99935	358611
25	99904	358656
26	99872	358682
27	99978	358608
28	100012	358636
29	100041	358695
30	100052	358651