Hendrina wet ash disposal facility - EIA and Waste License Application

Groundwater specialist study

				Construction								
	T	<u> </u>		sh disposal				<u> </u>	T			
Potential Impact	Mitigation	Extent (E)	Duration (D)	Magnitude (M)	Probability (P)		ignificance (E+D+M)*P)	Status (+ve or -ve)	Confidence			
	Nature of impact:						ter will migrate downw		e water table and mos			
	with	1	2	2	5	25	Low	-	high			
Data-danation of	without	2	4	2	5	40	Medium	-	high			
Deterioration of groundwater quality due to	degree to which			1				.1				
leachate from initial ash	impact can be	it will be diffic					nount of leachate as mu	ich as possible	high			
slurry	reversed:		by ensuring that the under-drain and related systems work as designed.									
	degree of impact on	Since the impa	act is likely to be	e on local groun	dwater only, an	d this resource	can be replaced, the de	gree of impact	medium			
	irreplaceable resources:		is likely to be low									
	Nature of impact:	Spillages of hy	/drocarbons (e.	g. diesel) or solv	ents or other p	ollutants during	the construction phas	e may have an i	mpact on the quality o			
	with	1	2	2	1	5	Low	-	medium			
Deterioration of	without	2	4	2	3	24	Low	-	medium			
groundwater quality due to	degree to which						nwards, reversing the ir					
spillages during	impact can be		_		•		However, if appropriat		high			
construction	reversed: degree of impact on	are taken o	during the cons	truction phase (e.g. the bunding	or retueiling a	nd fuel storage areas, o	ontrol of all				
	irreplaceable	Since the impa	ict is likely to be				resource can be replac	ed, the degree	medium			
	resources:			of	impact is likely	to be low			caia			
	Nature of impact:	There is like	ely to be a smal	I rise in the wat	er table in the vi	icinity of the we	et ash disposal facility d	ue to water per	colating downwards			
	with	1	1	2	4	16	Low	-	medium			
Rise in water table during	without	2	1	2	4	20	Low	-	medium			
	degree to which impact can be						on of extra water down uction phase, the degre		medium			
initial slurry deposition	reversed:	completely. 3	ince siurry depo		be reversed is	-		e to which the	medium			
	degree of impact on			mpact car	. Be reversed is	thought to be i						
	irreplaceable				Minor				medium			
	resources:											
		we	et ash disp	osal facilit	y - No-Go A	Alternative	•					
Potential Impact	Mitigation	Extent	Duration	Magnitude	Probability	Si	ignificance	Status	Confidence			
	_	(E)	(D)	(M)	(P)		(E+D+M)*P)	(+ve or -ve)				
	Nature of impact: with	If the wet a	ash disposal fac	4	then it is likely t	hat there will b	e no change to the gro	undwater cond				
	without	2	1	4	4	28	Low	+	high high			
NIh	degree to which					•	be reversed if some fut					
No change to groundwater conditions at the site	impact can be	This positiv	high									
conditions at the site	reversed:			affected the gro	anawater anae	Trying the propi						
	degree of impact on irreplaceable	Groundwater	resource near	the proposed si	te is not conside	ered to be irrep	laceable, in the sense t	nat alternative				
	resources:			sources	of water can be	found if needer			medium			
				500,005	oi watei can be	iouna ii neede	u.		medium			
	resources					Tourid II ricede	u.		medium			
Data atial laws are		Extent	Duration	Pipeline I			ignificance	Status				
Potential Impact	Mitigation	(E)	(D)	Pipeline I Magnitude (M)	Probability (P)	Si (S=	ignificance (E+D+M)*P)	(+ve or -ve)	Confidence			
Potential Impact	Mitigation Nature of impact:	(E) It is possil	(D) ble that constru	Pipeline I Magnitude (M) action of the pip	Route 1 Probability (P) eline could lead	Si (S= to local deterio	ignificance (E+D+M)*P) pration in groundwater	(+ve or -ve)	Confidence ants of any sort are			
Potential Impact	Mitigation Nature of impact: with	(E) It is possil	(D) ble that constru 2	Pipeline I Magnitude (M) action of the pip	Probability (P) eline could lead	Si (S= to local deterio	ignificance (E+D+M)*P) pration in groundwater Low	(+ve or -ve)	Confidence ants of any sort are medium			
·	Mitigation Nature of impact: with without	(E) It is possil 2	(D) ble that constru 2 4	Pipeline I Magnitude (M) Inction of the pipeline 2 4	Probability (P) eline could lead	Si (S= to local deterion 6	ignificance (E+D+M)*P) oration in groundwater Low Low	(+ve or -ve) quality if pollut - -	Confidence ants of any sort are			
Possible deterioration in	Mitigation Nature of impact: with	(E) It is possil 2 2 Once pollutar	(D) ble that constru 2 4 hts are put into	Pipeline I Magnitude (M) action of the pip 2 4 trench, reversin	Probability (P) eline could lead 1 1 g the impact wo	Si (S= to local deterion 6 10 buld be fairly di	ignificance (E+D+M)*P) pration in groundwater Low	(+ve or -ve) quality if pollutexcavation of	Confidence ants of any sort are medium			
	Mitigation Nature of impact: with without degree to which	(E) It is possil 2 2 Once pollutar	(D) ble that constru 2 4 hts are put into	Pipeline I Magnitude (M) action of the pip 2 4 trench, reversin	Probability (P) eline could lead 1 1 g the impact wo	Si (S= to local deterion 6 10 buld be fairly di er, it is likely th	ignificance (E+D+M)*P) containing in groundwater Low Low fficult - necessitating re	(+ve or -ve) quality if pollutexcavation of	Confidence ants of any sort are medium medium			
Possible deterioration in	Mitigation Nature of impact: with without degree to which impact can be reversed: degree of impact on	(E) It is possil 2 2 Once pollutar the trench, e	(D) ple that construction of the construction	Pipeline I Magnitude (M) action of the pip 2 4 trench, reversinte precautions a	Probability (P) eline could lead 1 1 g the impact worder taken however avoided.	Si (S= to local deterior 6 10 ould be fairly di eer, it is likely th	ignificance (E+D+M)*P) containing in groundwater Low Low fficult - necessitating re	(+ve or -ve) quality if pollutexcavation of st completely	Confidence ants of any sort are medium medium medium			
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Possible deterioration in local groundwater quality Potential Impact Possible deterioration in local groundwater quality Potential Impact If the pipeline route is not	Mitigation Nature of impact: with without degree to which impact can be reversed: degree of impact on irreplaceable resources: Mitigation Nature of impact: with without degree to which impact can be reversed: degree of impact on irreplaceable resources: Mitigation Nature of impact on irreplaceable resources:	(E) It is possil 2 2 Once pollutar the trench, e The groun Extent (E) It is possil 2 Once pollutar the trench, e The groun	Duration (D) Duration (D) Duration (D) Dele that constructors of the constructors o	Pipeline I Magnitude (M) Letton of the pipe alternative sou Pipeline I Magnitude (M) Letton of the pipe alternative sou Pipeline I Magnitude (M) Letton of the pipe a trench, reversing te precautions a e along the pipe alternative sou Letton of the pipe alternative sou Line - No-G Magnitude	Probability (P) eline could lead 1 1 g the impact we re taken howeve avoided. eline route is not reces of water co Route 2 Probability (P) eline could lead 1 1 g the impact we re taken howeve avoided. eline route is not reces of water co O Alternati Probability	to local deterion of the state	ignificance (E+D+M)*P) rotation in groundwater Low Low fficult - necessitating re that the risk can be almo be irreplaceable, in the needed. ignificance (E+D+M)*P) rotation in groundwater Low Low fficult - necessitating re that the risk can be almo	sense that Status (+ve or -ve) quality if pollutexcavation of st completely Status (+ve or -ve) quality if pollutexcavation of st completely sense that	Confidence ants of any sort are medium medium medium Confidence ants of any sort are medium medium medium medium medium			

and no potential impact.	degree of impact on irreplaceable										
	resources:										
	resources.		Trans	mission Lir	o Corrido	v 1					
	ı	Extent	Duration				:	Status	İ		
Potential Impact	Mitigation	(E)	(D)	Magnitude (M)	Probability (P)		ignificance :(E+D+M)*P)	(+ve or -ve)	Confidence		
	Nature of impact:				<u> </u>	<u> </u>	rioration in groundwate		utants of any sort are		
	with	2	2	2	1	6	Low	- quanty ii poin	medium		
	without	2	4	4	1	10	Low	-	medium		
	degree to which	Once pollutants are introduced into the ground, reversing the impact would be fairly difficult - necessitating re-									
Possible deterioration in	impact can be	•		_	, 0	•	nat the risk can be almo	· ·	medium		
local groundwater quality	reversed:	CACCUVATION, C	сс. п арргорпа	te precuutions t	avoided.		ide the risk can be aimo	secompletely	mediam		
	degree of impact on					-					
	irreplaceable	The ground		· .			o be irreplaceable, in th	e sense that	medium		
	resources:			alternative sour	ces of water co	uld be found if	needed.				
			Trans	mission Lir	e - Corrido	or 2					
Transmission Line - Corridor 2 Extent Duration Magnitude Probability Significance Status											
Potential Impact	Mitigation	(E)	(D)	(M)	(P)	_	:(E+D+M)*P)	(+ve or -ve)	Confidence		
	Nature of impact:						rioration in groundwate		utants of any sort are		
	with	2	2	2	1	6	Low		medium		
								-	medium		
	without	2	4	4	1	10	Low	-	medium		
Descible deterioration in	without degree to which	_		4	1	10		- cessitating re-			
Possible deterioration in		Once polluta	nts are introduc	4 ced into the gro	1 und, reversing t	10 he impact wou	Low				
	degree to which	Once polluta	nts are introduc	4 ced into the gro	1 und, reversing t	10 he impact wou ver, it is likely th	Low ld be fairly difficult - ned		medium		
	degree to which impact can be	Once polluta excavation, e	nts are introduc tc. If appropria	4 ced into the gro te precautions a	1 und, reversing t re taken howev avoided.	10 he impact wou ver, it is likely th	Low Id be fairly difficult - neo nat the risk can be almo	st completely	medium		
Possible deterioration in local groundwater quality	degree to which impact can be reversed:	Once polluta excavation, e	nts are introducte. If appropria	4 ced into the gro te precautions a along the power	1 und, reversing t re taken howev avoided r line route is no	10 he impact wou ver, it is likely the	Low Id be fairly difficult - ned nat the risk can be almo to be irreplaceable, in the	st completely	medium		
	degree to which impact can be reversed: degree of impact on	Once polluta excavation, e	nts are introducte. If appropria	4 ced into the gro te precautions a	1 und, reversing t re taken howev avoided r line route is no	10 he impact wou ver, it is likely the	Low Id be fairly difficult - ned nat the risk can be almo to be irreplaceable, in the	st completely	medium medium		
	degree to which impact can be reversed: degree of impact on irreplaceable	Once polluta excavation, e	nts are introduc tc. If appropriat water resource	4 ced into the gro te precautions a along the power	1 und, reversing t ire taken howev avoided. r line route is no ces of water co	he impact wou ver, it is likely th out considered t uld be found if	Low Id be fairly difficult - ned nat the risk can be almo to be irreplaceable, in the	st completely	medium medium		
local groundwater quality	degree to which impact can be reversed: degree of impact on irreplaceable resources:	Once polluta excavation, e	nts are introduc tc. If appropriat water resource	4 ced into the gro te precautions a along the powe alternative sour	1 und, reversing t ire taken howev avoided. r line route is no ces of water co	he impact wou ver, it is likely th out considered t uld be found if	Low Id be fairly difficult - ned nat the risk can be almo to be irreplaceable, in the	st completely	medium medium medium		
	degree to which impact can be reversed: degree of impact on irreplaceable	Once pollutal excavation, e	nts are introduct. If appropriation water resource	4 ced into the gro te precautions a along the powe alternative sour	1 und, reversing to the taken however avoided. If line route is not cess of water co	he impact wou ver, it is likely the out considered t uld be found if	Low Id be fairly difficult - ned at the risk can be almo o be irreplaceable, in the needed.	st completely e sense that	medium medium		
local groundwater quality	degree to which impact can be reversed: degree of impact on irreplaceable resources:	Once polluta excavation, e	nts are introduct. If appropriation water resource Transmiss Duration	4 ced into the gro te precautions a along the powe alternative sour sion Line - Magnitude	1 und, reversing ti re taken howev avoided. r line route is no ces of water co No-Go Alte Probability	he impact wou ver, it is likely the out considered t uld be found if	Low Id be fairly difficult - net and the risk can be almo to be irreplaceable, in th needed.	st completely e sense that Status	medium medium medium		
local groundwater quality	degree to which impact can be reversed: degree of impact on irreplaceable resources:	Once polluta excavation, e	nts are introduct. If appropriation water resource Transmiss Duration	4 ced into the gro te precautions a along the powe alternative sour sion Line - Magnitude	1 und, reversing ti re taken howev avoided. r line route is no ces of water co No-Go Alte Probability	he impact wou ver, it is likely the out considered t uld be found if	Low Id be fairly difficult - net and the risk can be almo to be irreplaceable, in th needed.	st completely e sense that Status	medium medium medium		
Potential Impact	degree to which impact can be reversed: degree of impact on irreplaceable resources: Mitigation Nature of impact:	Once polluta excavation, e	nts are introduct. If appropriation water resource Transmiss Duration	4 ced into the gro te precautions a along the powe alternative sour sion Line - Magnitude	1 und, reversing ti re taken howev avoided. r line route is no ces of water co No-Go Alte Probability	he impact wou ver, it is likely the out considered t uld be found if	Low Id be fairly difficult - net and the risk can be almo to be irreplaceable, in th needed.	st completely e sense that Status	medium medium medium		
Potential Impact If the power line route is	degree to which impact can be reversed: degree of impact on irreplaceable resources: Mitigation Nature of impact: with without	Once polluta excavation, e	nts are introduct. If appropriation water resource Transmiss Duration	4 ced into the gro te precautions a along the powe alternative sour sion Line - Magnitude	1 und, reversing ti re taken howev avoided. r line route is no ces of water co No-Go Alte Probability	he impact wou ver, it is likely the out considered t uld be found if	Low Id be fairly difficult - net and the risk can be almo to be irreplaceable, in th needed.	st completely e sense that Status	medium medium medium		
Potential Impact If the power line route is not changed, there is likely	degree to which impact can be reversed: degree of impact on irreplaceable resources: Mitigation Nature of impact: with without degree to which	Once polluta excavation, e	nts are introduct. If appropriation water resource Transmiss Duration	4 ced into the gro te precautions a along the powe alternative sour sion Line - Magnitude	1 und, reversing ti re taken howev avoided. r line route is no ces of water co No-Go Alte Probability	he impact wou ver, it is likely the out considered t uld be found if	Low Id be fairly difficult - net and the risk can be almo to be irreplaceable, in th needed.	st completely e sense that Status	medium medium medium		
Potential Impact If the power line route is not changed, there is likely	degree to which impact can be reversed: degree of impact on irreplaceable resources: Mitigation Nature of impact: with without degree to which	Once polluta excavation, e	nts are introduct. If appropriation water resource Transmiss Duration	4 ced into the gro te precautions a along the powe alternative sour sion Line - Magnitude	1 und, reversing ti re taken howev avoided. r line route is no ces of water co No-Go Alte Probability	he impact wou ver, it is likely the out considered t uld be found if	Low Id be fairly difficult - net and the risk can be almo to be irreplaceable, in th needed.	st completely e sense that Status	medium medium medium		
Potential Impact If the power line route is not changed, there is likely to be no change to existing groundwater conditions,	degree to which impact can be reversed: degree of impact on irreplaceable resources: Mitigation Nature of impact: with without degree to which impact can be	Once polluta excavation, e	nts are introduct. If appropriation water resource Transmiss Duration	4 ced into the gro te precautions a along the powe alternative sour sion Line - Magnitude	1 und, reversing ti re taken howev avoided. r line route is no ces of water co No-Go Alte Probability	he impact wou ver, it is likely the out considered t uld be found if	Low Id be fairly difficult - net and the risk can be almo to be irreplaceable, in th needed.	st completely e sense that Status	medium medium medium		
Potential Impact If the power line route is not changed, there is likely to be no change to existing groundwater conditions,	degree to which impact can be reversed: degree of impact on irreplaceable resources: Mitigation Nature of impact: with without degree to which impact can be reversed:	Once polluta excavation, e	nts are introduct. If appropriation water resource Transmiss Duration	4 ced into the gro te precautions a along the powe alternative sour sion Line - Magnitude	1 und, reversing ti re taken howev avoided. r line route is no ces of water co No-Go Alte Probability	he impact wou ver, it is likely the out considered t uld be found if	Low Id be fairly difficult - net and the risk can be almo to be irreplaceable, in th needed.	st completely e sense that Status	medium medium medium		

Hendrina Wet Ash Disposal Facility - EIA and Waste License Application

Groundwater specialist study

				Operation	al Phase							
			wet as		facility - S							
Potential Impact	Mitigation	Extent (E)	Duration (D)	Magnitude (M)	Probability (P)		gnificance (E+D+M)*P)	Status (+ve or -ve)	Confidence			
	Nature of impact:			<u> </u>				<u> </u>	e water table and most			
	with	2	3	4	4	36	Medium	-	high			
Deterioration of	without	2	3	6	4	44	Medium ation. It is more feasible	-	high			
groundwater quality due to	degree to which impact can be						nd related systems wor		high			
ash leachate	reversed:	When	deposition cease	es, natural atter	nuation over ma	ny years is likel	y to slowly reverse the	impact.				
	degree of impact on irreplaceable	Since the impa	ict is likely to be	on local groun	• • • • • • • • • • • • • • • • • • • •		can be replaced, the de	gree of impact	medium			
	resources:				is likely to be							
	Nature of impact: with	If any othe	r polluting subs	tances are dispo	osed onto the w	et ash disposal	facility (i.e. apart from Low	the ash itself) t	his may lead to local medium			
	without	2	4	8	2	28	Low	-	medium			
Deterioration of groundwater quality due to	degree to which		The degree to which pollution from other sources can be reversed will depend on the pollutant (properties, lume, time over which disposed, etc). It will be much cheaper and easier to ensure that no other pollutants are									
other sources of pollution	reversed:		•			•	disposal would be illeg	•	iligii			
	degree of impact on irreplaceable						mpact on the local wate can be almost entirely		medium			
	resources:						ver, and this impact is t		medium			
	Nature of impact:							ue to the water	percolating downwards			
	with without	2	4	2	3 4	24 32	Low Medium	-	medium medium			
	degree to which			itigation mecha	nism will be the	under-drain ar	d penstock system. Thi					
		be able to cor	mpletely remov	e the impact ho	wer. Once depo		is likely that the local w	ater table will	medium			
,,,	degree of impact on											
	irreplaceable resources:			This	impact is thoug	ht to be low.			medium			
	Nature of impact:	It is possible t	hat the ground	water flow dire	ctions will be al	tered locally du	e to the rise or "mound	ing" of the loca	l water table. This may			
	with without	2	4	2 2	3	24 24	Low Low	-	medium medium			
Change in local	degree to which							to their are	medium			
groundwater flow directions due to rise in	impact can be	THIS IIIIpact I	This impact is only practically reversible once deposition ceases and water table conditions return to their pre- deposition state.									
local water table	reversed: degree of impact on											
	irreplaceable		This impact is thought to be low.									
	V00011V0001											
	resources:	We	et ash disp	osal facility	v - No-Go A	Alternative						
Potential Impact	resources: Mitigation	Extent	Duration	Magnitude	y - No-Go A	Si	gnificance	Status	Confidence			
Potential Impact		Extent (E)	Duration (D)	Magnitude (M)	Probability (P)	Si (S=	gnificance (E+D+M)*P)	(+ve or -ve)				
Potential Impact	Mitigation Nature of impact: with	Extent (E) If the wet a	Duration (D) ash disposal faci	Magnitude (M) ility is not built, 4	Probability (P) then it is likely t	Si (S=I that there will b	gnificance (E+D+M)*P) e no change to the grou Medium	(+ve or -ve) undwater cond +	itions underlying the medium			
	Mitigation Nature of impact: with without	Extent (E) If the wet a	Duration (D) ash disposal faci 4 4	Magnitude (M) Ility is not built, 4 4	Probability (P) then it is likely to 4	Si (S=i that there will b 40 40	gnificance (E+D+M)*P) e no change to the grou Medium Medium	(+ve or -ve) undwater cond + +	itions underlying the			
No change to groundwater	Mitigation Nature of impact: with without degree to which impact can be	Extent (E) If the wet a	Duration (D) ash disposal faci 4 4 ve impact (i.e. n	Magnitude (M) lity is not built, 4 4 ot building the	Probability (P) then it is likely to 4 4 wet ash disposa	Si (S=: that there will b 40 40 I facility) could	gnificance (E+D+M)*P) e no change to the grou Medium Medium be reversed if some fut	(+ve or -ve) undwater cond + +	itions underlying the medium			
	Mitigation Nature of impact: with without degree to which impact can be reversed:	Extent (E) If the wet a 2 2 This positive	Duration (D) ash disposal faci 4 4 ve impact (i.e. n	Magnitude (M) liity is not built, 4 4 ot building the affected the gro	Probability (P) then it is likely to 4 4 wet ash disposa- undwater unde	Si (S=) that there will b 40 40 I facility) could	gnificance (E+D+M)*P) e no change to the grou Medium Medium be reversed if some fut osed site.	(+ve or -ve) undwater cond + + ure activity	itions underlying the medium medium			
No change to groundwater	Mitigation Nature of impact: with without degree to which impact can be	Extent (E) If the wet a 2 2 This positive	Duration (D) ash disposal faci 4 4 ve impact (i.e. n	Magnitude (M) ility is not built, 4 4 ot building the affected the gro the proposed s	Probability (P) then it is likely to the standard standar	Si (S=: that there will b 40 40 I facility) could rlying the propo	gnificance (E+D+M)*P) e no change to the grou Medium Medium be reversed if some fut osed site.	(+ve or -ve) undwater cond + + ure activity	itions underlying the medium medium			
No change to groundwater	Mitigation Nature of impact: with without degree to which impact can be reversed: degree of impact on	Extent (E) If the wet a 2 2 This positive	Duration (D) ash disposal faci 4 4 ve impact (i.e. n	Magnitude (M) lity is not built, 4 4 ot building the affected the gro the proposed s sources of	Probability (P) then it is likely to 4 4 wet ash disposa undwater unde ite is not consid of water can be	Si (S=: that there will b 40 40 I facility) could rlying the propo	gnificance (E+D+M)*P) e no change to the grou Medium Medium be reversed if some fut osed site.	(+ve or -ve) undwater cond + + ure activity	itions underlying the medium medium medium			
No change to groundwater conditions at the site	Mitigation Nature of impact: with without degree to which impact can be reversed: degree of impact on irreplaceable resources:	Extent (E) If the wet a 2 2 This position The groundwa	Duration (D) ush disposal faci 4 4 ve impact (i.e. n	Magnitude (M) lity is not built, 4 4 ot building the affected the gro the proposed sources of	Probability (P) then it is likely to 4 4 wet ash disposa undwater unde ite is not consid of water can be	Si (S=i) that there will be 40 40 40 If facility) could rlying the proporered to be irreg found if needed	gnificance [E+D+M]*P) e no change to the grou Medium Medium be reversed if some fut ssed site. laceable, in the sense t	(+ve or -ve) undwater cond + + ure activity hat alternative	itions underlying the medium medium medium			
No change to groundwater	Mitigation Nature of impact: with without degree to which impact can be reversed: degree of impact on irreplaceable resources: Mitigation	Extent (E) If the wet a 2 2 This positive	Duration (D) ash disposal faci 4 4 ve impact (i.e. n	Magnitude (M) lity is not built, 4 4 ot building the affected the gro the proposed s sources of	Probability (P) then it is likely to 4 4 wet ash disposa undwater unde ite is not consid of water can be	Si (S=i that there will be 40 40 40 40 40 40 40 40 40 40 40 40 40	gnificance (E+D+M)*P) e no change to the grou Medium Medium be reversed if some fut osed site.	(+ve or -ve) undwater cond + + ure activity	itions underlying the medium medium medium			
No change to groundwater conditions at the site	Mitigation Nature of impact: with without degree to which impact can be reversed: degree of impact on irreplaceable resources: Mitigation Nature of impact:	Extent (E) If the wet a 2 2 This positiv The groundwa	Duration (D) ssh disposal faci 4 4 ve impact (i.e. n 2 ster resource at	Magnitude (M) lity is not built, 4 4 ot building the affected the gro the proposed sources of pipeline for Magnitude	Probability (P) then it is likely to 4 4 wet ash disposa undwater unde lite is not consid of water can be Route 1 Probability	Si (S=i that there will be 40 40 40 40 40 40 40 40 40 40 40 40 40	gnificance (E+D+M)*P) e no change to the grou Medium Medium be reversed if some fut used site. blaceable, in the sense to the ground it is the ground it	(+ve or -ve) undwater cond + + ure activity hat alternative Status	itions underlying the medium medium medium			
No change to groundwater conditions at the site	Mitigation Nature of impact: with without degree to which impact can be reversed: degree of impact on irreplaceable resources: Mitigation Nature of impact: with without	Extent (E) If the wet a 2 2 This positiv The groundwa	Duration (D) ssh disposal faci 4 4 ve impact (i.e. n 2 ster resource at	Magnitude (M) lity is not built, 4 4 ot building the affected the gro the proposed sources of pipeline for Magnitude	Probability (P) then it is likely to 4 4 wet ash disposa undwater unde lite is not consid of water can be Route 1 Probability	Si (S=i that there will be 40 40 40 40 40 40 40 40 40 40 40 40 40	gnificance (E+D+M)*P) e no change to the grou Medium Medium be reversed if some fut used site. blaceable, in the sense to the ground it is the ground it	(+ve or -ve) undwater cond + + ure activity hat alternative Status	itions underlying the medium medium medium			
No change to groundwater conditions at the site	Mitigation Nature of impact: with without degree to which impact can be reversed: degree of impact on irreplaceable resources: Mitigation Nature of impact: with without degree to which	Extent (E) If the wet a 2 2 This positiv The groundwa	Duration (D) ssh disposal faci 4 4 ve impact (i.e. n 2 ster resource at	Magnitude (M) lity is not built, 4 4 ot building the affected the gro the proposed sources of pipeline for Magnitude	Probability (P) then it is likely to 4 4 wet ash disposa undwater unde lite is not consid of water can be Route 1 Probability	Si (S=i that there will be 40 40 40 40 40 40 40 40 40 40 40 40 40	gnificance (E+D+M)*P) e no change to the grou Medium Medium be reversed if some fut used site. blaceable, in the sense to the ground it is the ground it	(+ve or -ve) undwater cond + + ure activity hat alternative Status	itions underlying the medium medium medium			
No change to groundwater conditions at the site Potential Impact	Mitigation Nature of impact: with without degree to which impact can be reversed: degree of impact on irreplaceable resources: Mitigation Nature of impact: with without	Extent (E) If the wet a 2 2 This positiv The groundwa	Duration (D) ssh disposal faci 4 4 ve impact (i.e. n 2 ster resource at	Magnitude (M) lity is not built, 4 4 ot building the affected the gro the proposed sources of pipeline for Magnitude	Probability (P) then it is likely to 4 4 wet ash disposa undwater unde lite is not consid of water can be Route 1 Probability	Si (S=i that there will be 40 40 40 40 40 40 40 40 40 40 40 40 40	gnificance (E+D+M)*P) e no change to the grou Medium Medium be reversed if some fut used site. blaceable, in the sense to the ground it is the groun	(+ve or -ve) undwater cond + + ure activity hat alternative Status	itions underlying the medium medium medium			
No change to groundwater conditions at the site Potential Impact No impacts on local	Mitigation Nature of impact: with without degree to which impact can be reversed: degree of impact on irreplaceable resources: Mitigation Nature of impact: with without degree to which impact can be reversed: degree of impact on	Extent (E) If the wet a 2 2 This positiv The groundwa	Duration (D) ssh disposal faci 4 4 ve impact (i.e. n 2 ster resource at	Magnitude (M) lity is not built, 4 4 ot building the affected the gro the proposed sources of pipeline for Magnitude	Probability (P) then it is likely to 4 4 wet ash disposa undwater unde lite is not consid of water can be Route 1 Probability	Si (S=i that there will be 40 40 40 40 40 40 40 40 40 40 40 40 40	gnificance (E+D+M)*P) e no change to the grou Medium Medium be reversed if some fut used site. blaceable, in the sense to the ground it is the groun	(+ve or -ve) undwater cond + + ure activity hat alternative Status	itions underlying the medium medium medium			
No change to groundwater conditions at the site Potential Impact No impacts on local	Mitigation Nature of impact: with without degree to which impact can be reversed: degree of impact on irreplaceable resources: Mitigation Nature of impact: with without degree to which impact can be reversed:	Extent (E) If the wet a 2 2 This positiv The groundwa	Duration (D) ssh disposal faci 4 4 ve impact (i.e. n 2 ster resource at	Magnitude (M) lity is not built, 4 4 ot building the affected the gro the proposed sources of pipeline for Magnitude	Probability (P) then it is likely to 4 4 wet ash disposa undwater unde lite is not consid of water can be Route 1 Probability	Si (S=i that there will be 40 40 40 40 40 40 40 40 40 40 40 40 40	gnificance (E+D+M)*P) e no change to the grou Medium Medium be reversed if some fut used site. blaceable, in the sense to the ground it is the groun	(+ve or -ve) undwater cond + + ure activity hat alternative Status	itions underlying the medium medium medium			
No change to groundwater conditions at the site Potential Impact No impacts on local	Mitigation Nature of impact: with without degree to which impact can be reversed: degree of impact on irreplaceable resources: Mitigation Nature of impact: with without degree to which impact can be reversed: degree of impact on irreplaceable	Extent (E) If the wet a 2 2 This positiv The groundwa	Duration (D) ssh disposal faci 4 4 ve impact (i.e. n 2 ster resource at	Magnitude (M) lity is not built, 4 4 ot building the affected the gro the proposed s sources (Pipeline F Magnitude (M)	Probability (P) then it is likely to 4 4 wet ash disposa undwater unde ite is not consid of water can be Route 1 Probability (P)	Si (S=i that there will by 40 40 40 40 40 40 40 40 40 40 40 40 40	gnificance (E+D+M)*P) e no change to the grou Medium Medium be reversed if some fut	(+ve or -ve) undwater cond + + ure activity hat alternative Status	itions underlying the medium medium medium			
No change to groundwater conditions at the site Potential Impact No impacts on local	Mitigation Nature of impact: with without degree to which impact can be reversed: degree of impact on irreplaceable resources: Mitigation Nature of impact: with without degree to which impact can be reversed: degree of impact on irreplaceable	Extent (E) If the wet a 2 2 This positiv The groundwa Extent (E)	Duration (D) ssh disposal faci 4 4 ve impact (i.e. n a ter resource at Duration (D)	Magnitude (M) lity is not built, 4 4 ot building the affected the gro the proposed sources of Magnitude (M) Pipeline F Magnitude Magnitude Magnitude	Probability (P) then it is likely to the it is not consider of water can be the ite is not consider of water can be the ite is not consider the ite is not consider of water can be the ite is not consider the ite is not consider the ite is not considered. Probability (P) Route 2 Probability	Si (S=i that there will be 40 40 40 If facility) could rlying the proporered to be irrepfound if needed (S=i (S=i S=i S=i S=i S=i S=i S=i S=i S=i S=i	gnificance (E+D+M)*P) e no change to the grou Medium Medium be reversed if some fut osed site. slaceable, in the sense to it. gnificance (E+D+M)*P)	(+ve or -ve) undwater cond + + ure activity hat alternative Status (+ve or -ve)	itions underlying the medium medium medium			
No change to groundwater conditions at the site Potential Impact No impacts on local groundwater anticipated	Mitigation Nature of impact: with without degree to which impact can be reversed: degree of impact on irreplaceable resources: Mitigation Nature of impact: with without degree to which impact can be reversed: degree of impact on irreplaceable resources:	Extent (E) If the wet a 2 This positive The groundware Extent (E)	Duration (D) ssh disposal faci 4 4 ve impact (i.e. n ter resource at	Magnitude (M) lity is not built, 4 4 ot building the affected the gro the proposed s sources (Pipeline F Magnitude (M)	Probability (P) then it is likely to 4 4 wet ash disposa undwater unde ite is not consid of water can be Route 1 Probability (P)	Si (S=i that there will be 40 40 40 If facility) could rlying the proporered to be irrepfound if needed (S=i (S=i S=i S=i S=i S=i S=i S=i S=i S=i S=i	gnificance (E+D+M)*P) e no change to the grou Medium Medium be reversed if some fut	(+ve or -ve) undwater cond + + ure activity hat alternative Status (+ve or -ve)	itions underlying the medium medium medium medium Confidence			
No change to groundwater conditions at the site Potential Impact No impacts on local groundwater anticipated	Mitigation Nature of impact: with without degree to which impact can be reversed: degree of impact on irreplaceable resources: Mitigation Nature of impact: with without degree to which impact can be reversed: degree of impact on irreplaceable resources: Mitigation Nature of impact on	Extent (E) If the wet a 2 2 This positiv The groundwa Extent (E)	Duration (D) ssh disposal faci 4 4 ve impact (i.e. n a ter resource at Duration (D)	Magnitude (M) lity is not built, 4 4 ot building the affected the gro the proposed sources of Magnitude (M) Pipeline F Magnitude Magnitude Magnitude	Probability (P) then it is likely to the it is not consider of water can be the ite is not consider of water can be the ite is not consider the ite is not consider of water can be the ite is not consider the ite is not consider the ite is not considered. Probability (P) Route 2 Probability	Si (S=i that there will be 40 40 40 If facility) could rlying the proporered to be irrepfound if needed (S=i (S=i S=i S=i S=i S=i S=i S=i S=i S=i S=i	gnificance (E+D+M)*P) e no change to the grou Medium Medium be reversed if some fut osed site. slaceable, in the sense to it. gnificance (E+D+M)*P)	(+ve or -ve) undwater cond + + ure activity hat alternative Status (+ve or -ve)	itions underlying the medium medium medium medium Confidence			
No change to groundwater conditions at the site Potential Impact No impacts on local groundwater anticipated Potential Impact	Mitigation Nature of impact: with without degree to which impact can be reversed: degree of impact on irreplaceable resources: Mitigation Nature of impact: with without degree to which impact can be reversed: degree of impact on irreplaceable resources: Mitigation Nature of impact on	Extent (E) If the wet a 2 2 This positiv The groundwa Extent (E)	Duration (D) ssh disposal faci 4 4 ve impact (i.e. n a ter resource at Duration (D)	Magnitude (M) lity is not built, 4 4 ot building the affected the gro the proposed sources of Magnitude (M) Pipeline F Magnitude Magnitude Magnitude	Probability (P) then it is likely to the it is not consider of water can be the ite is not consider of water can be the ite is not consider the ite is not consider of water can be the ite is not consider the ite is not consider the ite is not considered. Probability (P) Route 2 Probability	Si (S=i that there will be 40 40 40 If facility) could rlying the proporered to be irrepfound if needed (S=i (S=i S=i S=i S=i S=i S=i S=i S=i S=i S=i	gnificance (E+D+M)*P) e no change to the grou Medium Medium be reversed if some fut osed site. slaceable, in the sense to it. gnificance (E+D+M)*P)	(+ve or -ve) undwater cond + + ure activity hat alternative Status (+ve or -ve)	itions underlying the medium medium medium medium Confidence			
No change to groundwater conditions at the site Potential Impact No impacts on local groundwater anticipated	Mitigation Nature of impact: with without degree to which impact can be reversed: degree of impact on irreplaceable resources: Mitigation Nature of impact: with without degree to which impact can be reversed: degree of impact on irreplaceable resources: Mitigation Nature of impact: with without degree to impact on irreplaceable resources: Mitigation Nature of impact on irreplaceable versources:	Extent (E) If the wet a 2 2 This positiv The groundwa Extent (E)	Duration (D) ssh disposal faci 4 4 ve impact (i.e. n a ter resource at Duration (D)	Magnitude (M) lity is not built, 4 4 ot building the affected the gro the proposed sources of Magnitude (M) Pipeline F Magnitude Magnitude Magnitude	Probability (P) then it is likely to the it is not consider of water can be the ite is not consider of water can be the ite is not consider the ite is not consider of water can be the ite is not consider the ite is not consider the ite is not considered. Probability (P) Route 2 Probability	Si (S=i that there will be 40 40 40 If facility) could rlying the proporered to be irrepfound if needed (S=i (S=i S=i S=i S=i S=i S=i S=i S=i S=i S=i	gnificance (E+D+M)*P) e no change to the grou Medium Medium be reversed if some fut osed site. slaceable, in the sense to it. gnificance (E+D+M)*P)	(+ve or -ve) undwater cond + + ure activity hat alternative Status (+ve or -ve)	itions underlying the medium medium medium medium Confidence			
No change to groundwater conditions at the site Potential Impact No impacts on local groundwater anticipated Potential Impact No impacts on local groundwater anticipated	Mitigation Nature of impact: with without degree to which impact can be reversed: degree of impact on irreplaceable resources: Mitigation Nature of impact: with without degree to which impact can be reversed: degree of impact on irreplaceable resources: Mitigation Nature of impact with without degree to impact on irreplaceable resources:	Extent (E) If the wet a 2 2 This positiv The groundwa Extent (E)	Duration (D) ssh disposal faci 4 4 ve impact (i.e. n a ter resource at Duration (D)	Magnitude (M) lity is not built, 4 4 ot building the affected the gro the proposed sources of Magnitude (M) Pipeline F Magnitude Magnitude Magnitude	Probability (P) then it is likely to the it is not consider of water can be the ite is not consider of water can be the ite is not consider the ite is not consider of water can be the ite is not consider the ite is not consider the ite is not considered. Probability (P) Route 2 Probability	Si (S=i that there will be 40 40 40 If facility) could rlying the proporered to be irrepfound if needed (S=i (S=i S=i S=i S=i S=i S=i S=i S=i S=i S=i	gnificance (E+D+M)*P) e no change to the grou Medium Medium be reversed if some fut osed site. slaceable, in the sense to it. gnificance (E+D+M)*P)	(+ve or -ve) undwater cond + + ure activity hat alternative Status (+ve or -ve)	itions underlying the medium medium medium medium Confidence			
No change to groundwater conditions at the site Potential Impact No impacts on local groundwater anticipated Potential Impact No impacts on local groundwater anticipated	Mitigation Nature of impact: with without degree to which impact can be reversed: degree of impact on irreplaceable resources: Mitigation Nature of impact: with without degree to which impact can be reversed: degree of impact on irreplaceable resources: Mitigation Nature of impact: with without degree to which impact can be reversed: degree of impact on irreplaceable resources: ditigation Nature of impact: with without degree to which impact can be reversed: degree of impact on irreplaceable	Extent (E) If the wet a 2 2 This positiv The groundwa Extent (E)	Duration (D) ssh disposal faci 4 4 ve impact (i.e. n a ter resource at Duration (D)	Magnitude (M) lity is not built, 4 4 ot building the affected the gro the proposed sources of Magnitude (M) Pipeline F Magnitude Magnitude Magnitude	Probability (P) then it is likely to the it is not consider of water can be the ite is not consider of water can be the ite is not consider the ite is not consider of water can be the ite is not consider the ite is not consider the ite is not considered. Probability (P) Route 2 Probability	Si (S=i that there will be 40 40 40 If facility) could rlying the proporered to be irrepfound if needed (S=i (S=i S=i S=i S=i S=i S=i S=i S=i S=i S=i	gnificance (E+D+M)*P) e no change to the grou Medium Medium be reversed if some fut osed site. slaceable, in the sense to it. gnificance (E+D+M)*P)	(+ve or -ve) undwater cond + + ure activity hat alternative Status (+ve or -ve)	itions underlying the medium medium medium medium Confidence			
No change to groundwater conditions at the site Potential Impact No impacts on local groundwater anticipated Potential Impact No impacts on local groundwater anticipated	Mitigation Nature of impact: with without degree to which impact can be reversed: degree of impact on irreplaceable resources: Mitigation Nature of impact: with without degree to which impact can be reversed: degree of impact on irreplaceable resources:	Extent (E) If the wet a 2 2 This positiv The groundwa Extent (E)	Duration (D) ssh disposal faci 4 4 /e impact (i.e. n a ter resource at Duration (D) Duration (D)	Magnitude (M) lity is not built, 4 4 ot building the affected the gro the proposed sources of pipeline f Magnitude (M) Pipeline f Magnitude (M)	Probability (P) then it is likely to the it is not consider of water can be the ite is not consider of water can be the ite is not consider the ite is not consider of water can be the ite is not consider the ite is not consider the ite is not considered. Probability (P) Route 2 Probability	Si (S=i that there will be 40 40 40 If facility) could rlying the proporered to be irrepfound if needed (S=i (S=i (S=i (S=i (S=i (S=i (S=i (S=i	gnificance (E+D+M)*P) e no change to the grou Medium Medium be reversed if some fut osed site. slaceable, in the sense to it. gnificance (E+D+M)*P)	(+ve or -ve) undwater cond + + ure activity hat alternative Status (+ve or -ve)	itions underlying the medium medium medium medium Confidence			

Potential Impact	Mitigation	Extent (E)	Duration (D)	Magnitude (M)	Probability (P)		gnificance (E+D+M)*P)	Status (+ve or -ve)	Confidence
	Nature of impact:								
	with								
	without								
No increase on local	degree to which								
No impacts on local	impact can be								
groundwater anticipated	reversed:								
	degree of impact on								
	irreplaceable								
	resources:								
			Trans	mission Lir	ne - Corrido	or 1			
Potential Impact	Mitigation	Extent	Duration	Magnitude	Probability	Si	gnificance	Status	Confidence
rotential impact	Willigation	(E)	(D)	(M)	(P)	(S=	(E+D+M)*P)	(+ve or -ve)	Connuence
	Nature of impact:								
	with								
	without								
No impacts on local	degree to which								
	impact can be								
groundwater anticipated	reversed:								
	degree of impact on								
	irreplaceable								
	resources:								
			Trans	mission Lir	ne - Corrido	or 2			
		Extent	Duration	Magnitude	Probability		gnificance	Status	
Potential Impact	Mitigation	(E)	(D)	(M)	(P)		(E+D+M)*P)	(+ve or -ve)	Confidence
	Nature of impact:	(E)	(0)	(IVI)	(F)	(3-	(LTDTIVI) F)	(+ve or -ve)	
	with								
	without								
	degree to which								
No impacts on local	impact can be								
groundwater anticipated	reversed:								
	degree of impact on								
	irreplaceable								
	resources:								
	resources.		Transmiss	ion Line	No-Go Alte	rnativo			
		Extent	Duration	Magnitude	Probability		gnificance	Status	
Potential Impact	Mitigation	(E)	(D)	(M)	(P)		(E+D+M)*P)	(+ve or -ve)	Confidence
	Nature of impact:	ν-,	,	,	,	, ,,,	, . ,	,	
	with								
	without								
	degree to which								
No impacts on local	impact can be								
groundwater anticipated	reversed:								
	degree of impact on								
	irreplaceable								
	resources:								
	i coodi ceo.								

Hendrina Wet Ash Disposal Facility - EIA and Waste License Application

Groundwater specialist study

			e-Commis	sh disposal									
		Extent	Duration	Magnitude	Probability		gnificance	Status					
Potential Impact	Mitigation	(E)	(D)	(M)	(P)		(E+D+M)*P)	(+ve or -ve)	Confidence				
	Nature of impact:	Leachate from	n the wet ash d	isposal facility is	likely to contin	ue to percolate	downwards even when	n slurry disposa	has ceased, albeit at				
	with	2	3	2	3	21	Low	-	high				
	without	2	4	4	3	30	Low	-	high				
deterioration of groundwater quality due to	degree to which						versed. If the drainage						
leachate	impact can be reversed:	functional,	_	ionitoring contii inage of leachai			acility is vegetated the	n downward	high				
	degree of impact on												
	irreplaceable	The impact o	n local groundy	_	to be low, and to water resource	_	dwater resource could I	be replaced by	medium				
	resources:												
	Nature of impact: with	If any other	polluting subst	ances were disp	osed onto the v	wet ash disposa	I facility (i.e. apart from	the ash itself)	this may lead to local medium				
	without	2	4	8	2	28	Low	-	medium				
deterioration of	degree to which	The degree	to which pollu	tion from other	sources can be	reversed will de	epend on the pollutant	(properties,					
roundwater quality due to	1 -		me, time over which disposed, etc). It will be much cheaper and easier to ensure that no other pollutants were										
other pollutants	reversed:		sposed onto the wet ash disposal facility during the operational phase. Note that such disposal would be illegal, Certain types of pollutants (e.g. highly toxic, persistent pollutants) could impact on the local water resources,										
	degree of impact on irreplaceable						mpact on the local wate to be almost entirely avo		medium				
	resources:	_					nal phase. Furthermore		caia				
	Nature of impact:	Once deco					ty should begin to decli						
	with	2	4	0	3	18	Low	-	medium				
Minor changes to local	without degree to which	2 The impact	can be lessened	d by vegetating	the wet ash dist	24	Low d preventing erosion et	- which will	medium				
	impact can be						a preventing erosion et is ceased. The full impa		high				
groundwater flow direction							g the rehabilitated wet						
	degree of impact on												
	irreplaceable			Ver	y minor impact	anticipated			medium				
	resources:		l l'	! (:!!!	. N. C. /								
				osal facility				2: :					
Potential Impact	Mitigation	Extent (E)	Duration (D)	Magnitude (M)	Probability (P)		gnificance (E+D+M)*P)	Status (+ve or -ve)	Confidence				
	Nature of impact:						e no change to the gro		tions underlying the				
	with	2	4	4	4	40	Medium	+	medium				
	without	2	4	4	4	40	Medium	+	medium				
No change to groundwater	degree to which impact can be	This positi	ve impact (i.e. n	ot building the	wet ash disposa	l facility) could	be reversed if some fut	ure activity	medium				
conditions at the site	reversed:			mediam									
	degree of impact on	The groundw:	ater resource at	the proposed s	ite is not consid	ered to be irrer	placeable, in the sense t	that alternative					
	irreplaceable	The ground ne			of water can be			ac accimative	medium				
	resources:			Dinalina I	Davida 1								
		Enteret	Donation	Pipeline F		c:		Chahua					
Potential Impact	Mitigation	Extent (E)	Duration (D)	Magnitude (M)	Probability (P)		gnificance (E+D+M)*P)	Status (+ve or -ve)	Confidence				
	Nature of impact:	\	(=)	\ <i>\</i>	ı (· /	, , ,	(2.2)	(1100.10)					
	with												
	without												
No groundwater impact	degree to which impact can be												
anticipated	reversed:												
	degree of impact on												
	irreplaceable												
	resources:			- · · ·									
				Pipeline F				2: :					
Potential Impact	Mitigation	Extent (E)	Duration (D)	Magnitude (M)	Probability (P)		gnificance (E+D+M)*P)	Status (+ve or -ve)	Confidence				
	Nature of impact:	(-)	(6)	(141)	(F)	(3-	(LTDTN) F)	(+ve oi -ve)					
	with												
	without												
No groundwater impact	degree to which												
anticipated	impact can be reversed:												
	degree of impact on												
	irreplaceable												
	resources:												
				line - No-G									
Potential Impact	Mitigation	Extent	Duration	Magnitude	Probability		gnificance	Status	Confidence				
		(E)	(D)	(M)	(P)	(S=	(E+D+M)*P)	(+ve or -ve)					
	Nature of impact:												
	with without												
No groundwater impact	with without degree to which												
No groundwater impact anticipated	with without												

	degree of impact on								
	irreplaceable								
	resources:								
			Trans	mission Lir	ne - Corrido	or 1			
B. 1. 1. 1. 1		Extent				Status	0 61		
Potential Impact	Mitigation	(E)	(D)	(M)	(P)	(S=	(E+D+M)*P)	(+ve or -ve)	Confidence
	Nature of impact:								
	with								
	without								
No groundwater impact	degree to which								
anticipated	impact can be								
	reversed:								
	degree of impact on								
	irreplaceable								
	resources:								
			Trans	mission Lir	ne - Corrido	or 2			
Potential Impact	Mitigation	Extent	Duration	Magnitude	Probability	Si	Significance Statu		Confidence
rotentiai iiipact	ū	(E)	(D)	(M)	(P)	(S=	(E+D+M)*P)	(+ve or -ve)	Connuence
	Nature of impact:								
	with								
	without								
No groundwater impact	degree to which								
anticipated	impact can be								
unticipated	reversed:								
	degree of impact on								
	irreplaceable								
	resources:								
			Transmiss	ion Line - I	No-Go Alte	rnative			
Potential Impact	Mitigation	Extent	Duration	Magnitude	Probability		gnificance	Status	Confidence
•	Natura of impacts	(E)	(D)	(M)	(P)	(S=	(E+D+M)*P)	(+ve or -ve)	
	Nature of impact: with			I	I	ı			
	without								
	degree to which								
No groundwater impact	impact can be								
anticipated	reversed:								
	degree of impact on								
	irreplaceable								
	resources:								
	. coodiices.								

Hendrina Wet Ash Disposal Facility - EIA and Waste License Application

Groundwater specialist study

				Cumulative	impacts								
			wet as	h disposal	facility - Si	ite E							
Potential Impact	Mitigation	Extent	Duration	Magnitude	Probability		gnificance	Status	Confidence				
	Nature of impact:	(E)	(D)	(M)	(P)		(E+D+M)*P) Indwater quality, which	(+ve or -ve)	word during wat ash				
	with	2	4	2	4	32	Medium		medium				
	without	2	4	4	4	40	Medium		medium				
Deterioration of	degree to which		-	4	4		Wediaiii		mediam				
roundwater quality due to							ood practices during we		medium				
ash leachate	reversed:	facility constru	ction and opera	ation, and by re	vegetating and i	maintaining the	wet ash disposal facilit	ty after closure.					
	degree of impact on	The degree	of impost on in	ronlacoable rec	aureae ie thaugh	t to be low sin	ce local groundwater re	250118005 280					
	irreplaceable	The degree	•	nited and are th	· ·	,	•	esources are	medium				
	resources:	15 11 11											
	Nature of impact: with	1 otner poliu	tants are dispos	sed of at the we	t asn disposal ta	5	vertently), and these po	ilutants are nig	medium				
	without	2	4	8	2	28	Low	-	medium				
Deterioration of	degree to which		The degree to which pollution from other sources can be reversed will depend on the pollutant (properties,										
roundwater quality due to	impact can be	volume, time o	ume, time over which disposed, etc). It will be much cheaper and easier to ensure that no other pollutants were										
other sources of pollution			isposed onto the wet ash disposal facility during the operational phase. Note that such disposal would be illegal, Certain types of pollutants (e.g. highly toxic, persistent pollutants) could impact on the local water resources,										
	degree of impact on												
	irreplaceable resources:	_					n be almost entirely avo	•	meaium				
	Nature of impact:						nal phase. Furthermore ish disposal facility, eve		t ash disposal facilit				
	with	1	4	2	4	28	Low	-	medium				
Rise in local water table	without	2	4	2	4	32	Medium	-	medium				
and minor changes to local	degree to which	Unlikely that	this impact ca	n be reversed co	ompletely, but n	nitigation can b	e carried out (e.g. by ve	egetating and					
	impact can be	Ormicely trial	puct car		ing the wet ash			-o-tuting unu	medium				
directions	reversed:				.		<u>'</u>						
	degree of impact on irreplaceable				Minor				medium				
	resources:				WIIIO				mediam				
		W	at ach dich	osal facility	v - No-Go A	Alternative							
		Extent	Duration	Magnitude	Probability		gnificance	Status					
Potential Impact	Mitigation	(E)	(D)	(M)	(P)		(E+D+M)*P)	(+ve or -ve)	Confidence				
	Nature of impact:						e no change to the gro		tions underlying the				
	with	2	4	4	4	40	Medium	+	medium				
	without	2	4	4	4	40	Medium	+	medium				
No change to groundwater	degree to which	This positiv	ve impact (i.e. n	ot building the	wet ash disposa	I facility) could	be reversed if some fut	ure activity	medium				
conditions at site	impact can be reversed:		This positive impact (i.e. not building the wet ash disposal facility) could be reversed if some future activity affected the groundwater underlying the proposed site.										
	degree of impact on												
	irreplaceable	The groundwa	ter resource at		ite is not consid of water can be		placeable, in the sense t	that alternative	medium				
	resources:			sources	of water call be	Touriu ii fieeded	J.						
				Pipeline F	Route 1								
Potential Impact	Mitigation	Extent	Duration	Magnitude	Probability	Si	gnificance	Status	Confidence				
Totelliai impact	_	(E)	(D)	(M)	(P)	<u> </u>	(E+D+M)*P)	(+ve or -ve)	connacnee				
	Nature of impact:		ole that constru				oration in groundwater						
	with without	2	2				Law	quality if pollut	ants of any sort are				
	Without	2	2	2	1	6 10	Low	quality if pollut	medium				
	degree to which	2 Once pollutar	4	4	1	10	Low	-					
Possible deterioration in	degree to which impact can be	Once pollutar	4 nts are put into	4 the trench - e.g	1 . during constru	10 ction - reversin		- - fairly difficult -	medium medium				
Possible deterioration in local groundwater quality	_	Once pollutar	4 nts are put into	4 the trench - e.g the trench, etc.	1 . during constru	10 ction - reversing precautions are	Low g the impact would be	- - fairly difficult -	medium medium				
	impact can be reversed: degree of impact on	Once pollutar necessitating re	4 nts are put into e-excavation of	the trench - e.g the trench, etc. can be	1 . during constru If appropriate pe almost comple	tion - reversing precautions are etely avoided.	Low g the impact would be	- - fairly difficult - ely that the risk	medium medium medium				
	impact can be reversed: degree of impact on irreplaceable	Once pollutar necessitating re	4 nts are put into e-excavation of dwater resource	the trench - e.g the trench, etc. can be	1 . during constru . If appropriate pe almost completine route is not	t considered to	Low g the impact would be taken however, it is lik be irreplaceable, in the	- - fairly difficult - ely that the risk	medium medium				
	impact can be reversed: degree of impact on	Once pollutar necessitating re	4 nts are put into e-excavation of dwater resource	the trench - e.g the trench, etc. can b e along the pipe alternative sour	1 . during constru If appropriate per almost complete in the control of the contr	t considered to	Low g the impact would be taken however, it is lik be irreplaceable, in the	- - fairly difficult - ely that the risk	medium medium medium				
	impact can be reversed: degree of impact on irreplaceable	Once pollutar necessitating ro The ground	4 hts are put into e-excavation of dwater resource	the trench - e.g. the trench, etc. can be e along the pipe alternative sour	1 . during constru . If appropriate pe almost comple eline route is not cres of water co	tion - reversing precautions are etely avoided. t considered to uld be found if	Low g the impact would be taken however, it is lik be irreplaceable, in the needed.	- - fairly difficult - ely that the risk e sense that	medium medium medium				
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	degree of impact on irreplaceable										
	resources:										
			Trans	mission Lir	e - Corrido	or 1					
Potential Impact	Mitigation	Extent (E)	Duration (D)	Magnitude (M)	Probability (P)	-	ignificance (E+D+M)*P)	Status (+ve or -ve)	Confidence		
	Nature of impact:	It is possible	e that construct	ion of the powe	r lines could lea	d to local dete	rioration in groundwate	r quality if poll	utants of any sort are		
	with	2	2	2	1	6	Low	-	medium		
	without	2	4	4	1	10	Low	-	medium		
local groundwater quality	degree to which impact can be reversed:	•		_	, 0	er, it is likely th	ld be fairly difficult - neo nat the risk can be almo	· ·	medium		
	degree of impact on irreplaceable resources:	The ground		· .	r line route is no ces of water co		o be irreplaceable, in th needed.	e sense that	medium		
			Trans	mission Lir	e - Corrido	or 2					
Potential Impact	Mitigation	Extent (E)	Duration (D)	Magnitude (M)	Probability (P)		ignificance (E+D+M)*P)	Status (+ve or -ve)	Confidence		
	Nature of impact:	It is possible	e that construct	ion of the powe	r lines could lea	d to local dete	rioration in groundwate	r quality if poll	utants of any sort are		
	with	2	2	2	1	6	Low	-	medium		
	without	2	4	4	1	10	Low	-	medium		
Possible deterioration in local groundwater quality	degree to which impact can be reversed:		Once pollutants are introduced into the ground, reversing the impact would be fairly difficult - necessitating re- excavation, etc. If appropriate precautions are taken however, it is likely that the risk can be almost completely avoided.								
	degree of impact on irreplaceable resources:	The ground	The groundwater resource along the power line route is not considered to be irreplaceable, in the sense that alternative sources of water could be found if needed.								
			Transmiss	ion Line - I	No-Go Alte	rnative					
Potential Impact	Mitigation	Extent (E)	Duration (D)	Magnitude (M)	Probability (P)		ignificance (E+D+M)*P)	Status (+ve or -ve)	Confidence		
	Nature of impact:										
	with										
	without										
No groundwater impact anticipated	degree to which impact can be reversed:										
	degree of impact on irreplaceable resources:										